COLONY OF MAURITIUS

Annual Report

ON THE

Medical and Health Department

1949

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PRINTED AND PUBLISHED BY
J. ELIEL FELIX, GOVERNMENT PRINTER,
PORT LOUIS, MAURITIUS
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Functions

1. The functions of the Health Department are:—

(a) to investigate the influence of social, environmental and domestic factors on the incidence of human disease and disability ;

(b) to plan and carry out measures for the promotion of health ;

(c) to institute and maintain measures for the prevention of disease ;

(d) to provide a quarantine service to prevent the introduction of infectious disease by sea or air ;

(e) to provide facilities for treatment of disease, including mental disease, by maintenance of hospital and dispensary services ;

(f) to make provision for the rehabilitation of the disabled ;

(g) to control the practice of medicine, dentistry and pharmacy ;

(h) to conduct examinations for candidates for the Colonial Pharmacists' Diploma ;

(i) to provide facilities for the training of nurses, midwives and sanitary officers ;

(j) to advise local authorities regarding their health services and to inspect those services ;

(k) to prepare and publish reports and statistical or other information relating to health.

General Observations

2. For perhaps the first time in almost a century it may be said that, judged by standards of tropical countries, the general level of health in the colony in 1949 has been satisfactory. The death rate shows a substantial fall to 16·6 per 1,000 of the population as compared with 23·8 in 1948, 20·1 in 1947 and an average of 25·9 for the ten-year period 1940–1949.

All the major causes of death show a definite fall, particularly those in the category of infective and parasitic diseases. The improvement is similarly reflected in the infantile mortality rate (91·0) which for the first time since records are available fell below 100 per 1,000 live births.

3. Problems of recruitment have further delayed the establishment of certain important services such as school, tuberculosis and venereal disease services. The policy of awarding scholarships to medical, nursing and health personnel has however been pursued.

Two medical officers are at present in England following courses in anaesthesia and radiology ; seven Mauritian women are under training as student nurses, and one as physiotherapist.

4. The work of the malaria branch has progressed satisfactorily and the attack by the Colonial Insecticides Committee's research team shows promise of eradicating by residual spraying of houses one of the two Mauritian vectors, *A. funestus*.

I. Administration

Staff

5. The staff of the Medical and Health Department consists of:—

The Director of Medical Services ;

The Deputy Director of Medical Services ;

3 medical superintendents of hospitals ;

1 senior pathologist and 1 pathologist ;

27 medical officers (including 1 radiologist, 3 medical officers of health (2 posts vacant), and 2 school medical officers (both posts vacant)) ;

2 dentists (1 post vacant) ;

1 government chemist, 1 assistant government chemist and 5 laboratory assistants ;

1 entomologist and 3 microscopists ;

3 matrons and 1 assistant matron ;

1 chief clerk, 1 stock verifier, 1 storekeeper, 1 assistant storekeeper and 26 clerks of the General Clerical Service and allied branches ;

1 head attendant, 1 assistant head attendant, 1 steward and clerk and 1 storekeeper (Mental Hospital) ; 10 stewards, 173 dressers and 10 male attendants ; 10 charge nurses, 27 ward sisters and 89 nurses ; 5 midwives, 8 Sisters of Mercy ; 4 officers in charge of linen rooms and 1 seamstress ;

55 sanitary inspectors, 1 steward Quarantine Station and 10 other officers of the sanitation branch including 1 transport officer (and storekeeper sanitation) ;

120 other officers of minor ranks (messengers, drivers, etc.) ;

The personnel under " Other Charges " consists of:—

3 medical officers working part-time as lecturers to nursing students at Civil and Victoria hospitals ;

1 ophthalmologist also working part-time at Civil and Victoria hospitals;

324 male and 186 female hospital servants, 156 labourers, 29 drivers, 2 time keepers, 1 supervisor, 3 overseers and 14 carpenters.

Staff Movements

6.—*(a)* The Deputy Director of Medical Services left the colony on overseas leave on the 26th March. During his absence, the Government Medical Officer of Pamplemousses acted as Deputy Director.

The Medical Superintendent of the Mental Hospital who was on overseas leave resumed duty on the 8th June.

The Medical Superintendent of Civil Hospital left the colony on overseas leave on the 27th of September and a medical officer of the hospital acted as Superintendent.

The Medical Superintendent of Victoria Hospital who was on overseas leave returned to the colony on the 18th of January, and on the 1st of May was granted leave in the colony prior to retirement. A medical officer of the hospital acted in his post and was finally appointed Medical Superintendent on the 28th October.

One medical officer went on overseas leave on the 12th January and returned on the 1st September ; two others also went on overseas leave on the 26th July and 9th September respectively ; and two more left the colony on study leave on the 15th July and on the 26th July respectively, one to follow post-graduate courses in anaesthesia and the other in radiology. Temporary medical officers were employed to replace those on leave.

One medical officer who was on leave prior to retirement retired from the service on the 21st January.

Consequent upon the appointment since the 22nd December, 1948, as Medical Officer of Health Plaines Wilhems of the substantive holder of the post of Medical Officer of Health Port Louis and Port Health Officer, the acting Deputy Director of Medical Services acted also as Medical Officer of Health Port Louis and Port Health Officer.

The Matron of Victoria Hospital left the colony on leave on the 20th February and returned on the 4th December ; a charge nurse acted as matron during the latter's absence. The Matron of the Mental Hospital also left on overseas leave on the 20th February and, during her absence, the assistant matron of the hospital acted in her post.

(b) The post of Senior Pathologist which fell vacant on the transfer on the 17th of October of the substantive holder thereof to Nigeria, was filled by the appointment thereto of the Pathologist, the latter post being left vacant.

The Radiologist, who was on leave in the colony previous to retirement, retired from the service on the 17th September, and a private radiologist is acting as Government Radiologist.

The post of Government Chemist which was vacant since the transfer to Hong Kong on the 11th September, 1947, of the substantive holder thereof was filled on the 1st of June, and the actingship which was being performed by a Scientific Assistant of the Department of Agriculture lapsed on the latter date. An acting Assistant Government Chemist was appointed during the absence on overseas leave, covering the whole year, of the Assistant Government Chemist.

The Orthopaedic Surgeon left the colony on the 13th of April, on the expiration of his contract, and his post was filled by a new appointment.

The Nutrition Officer left the colony on the 10th of October on the expiration of her contract and the Assistant Nutrition Officer was appointed to act in her post.

The Senior Sanitary Inspector left the colony on the 9th of September on the expiration of his contract. His post has since been abolished.

The Rehabilitation Officer left the colony on the 5th of October on the expiration of his contract. The two physiotherapists left the colony on the 6th of June, on the expiration of their contracts, one of the vacant posts has been filled, and the officer appointed thereto is also acting as Rehabilitation Officer.

Financial

7. The revenue of the Colonial Government for the financial year 1948–49 was Rs. 44,632,466, of which Rs. 140,522 was received through the Medical and Health Department. The actual expenditure on medical services was Rs. 3,962,220 or 9·76 per cent of the total expenditure for the year. This represents a sum of Rs. 7·82 per head of the estimated population at 31st December, 1948, (mid-financial year).

Under the Development and Welfare Plan the revenue was Rs. 792,771 and the expenditure Rs. 780,697.

The following analysis of the general estimates indicates the distribution of the allocation:—

Medical and Health Department Estimates, 1948–49

	Administration		*Medical Services*		*Health Services*		
	Rupees	*percentage of allocation*	*Rupees*	*percentage of allocation*	*Rupees*	*percentage of allocation*	*Total allocations Rupees*
Personal Emoluments ...	98,219	9·3	778,810	73·5	182,723	17·2	1,059,752
Other Charges:—							
Recurrent ...	46,880	1·9	1,626,207	68·7	718,083	29·4	2,438,470
Non-Recurrent ...	—		47,300		—		
Totals ...	145,099	4·1	2,452,317	70·1	900,806	25·8	3,498,222

These figures represent a total expenditure of seven rupees and eighty two cents per head of the population estimated at the middle of the financial year distributed as follows :—

	Rs. c.
Cost of Administrative Sevices per head ...	0 32
,, Medical	5 48
,, Health	2 02
Total ...	Rs. 7 82

The principal increases in recurrent expenditure were due mainly to:—

(a) increase in the number of patients admitted to hospitals, partly resulting from the opening of a new hospital in Rodriguez, coupled with an increase in the prices of provisions ; and

(b) purchase of an additional supply of drugs as a precautionary measure against epidemic.

The non-recurrent items provided for additional equipment for Civil and Victoria Hospitals.

LEGAL

The following legislation was passed:—

Ordinance No. 15. cited as: The Midwives (Amendment) Ordinance 1949—further to amend the Midwives Ordinance 1926, permitting the framing of Rules for Midwives

Ordinance No. 33. cited as: The Public Health (Amendment) Ordinance 1949—to make notifiable all forms of tuberculosis which are clinically recognizable.

Ordinance No. 38. cited as: The Medical Practitioners (Amendment) Ordinance 1949—to amend the Medical Practitioners Ordinance 1927, to empower the Supreme Court to restore to the Register the name of a person erased therefrom.

Government Notice No. 4. cited as: The Public Health (Infantile Paralysis Control) Regulations 1949—being regulations made by the Director of Medical Services under Arts. 79 and 80 of Part IV *(c)* of the Public Health Ordinance 1925—to prevent young persons being carried in " means of public conveyance."

Government Notice No. 46. Being regulations made by the Director of Medical Services under paragraphs (1) and (10) of part I of Article 193 of the Public Health Ordinance 1925, as subsequently amended—to revoke the regulations published under Government Notice No. 238 of 1922, as amended by the regulations published under Government Notice No. 39 of 1936.

Government Notice No. 50. Being regulations made by the Director of Medical Services under Arts. 79 and 80 of Part IV *(c)* of the Public Health Ordinance 1925, and cited as: The Public Health (Infantile Paralysis Control) (Revocation) Regulations 1949—to revoke the Public Health (Infantile Paralysis Control) Regulations 1949 (Government Notice No. 4 of 1949).

Government Notice No. 73. Being regulations made by the Director of Medical Services under Art. 193 of the Public Health Ordinance 1925, as amended by the Cemetery Regulations 1946 and cited as: The Cemeteries (Amendment) Regulations 1949, to provide that exhumation of a corpse may be authorized at any time if it has been interred in a copper-lined coffin, as well as if it had been interred in a leaden coffin.

Government Notice No. 139. Being regulations made by the Director of Medical Services under Sections 155 and 193 of the Public Health Ordinance 1925, as subsequently amended—to fix charges to be levied in case of paying patients admitted to Floréal temporary hospital, and the fee to be paid for treatment by physiotherapy in government hospitals.

Government Notice No. 266. Being regulations made by the Director of Medical Services under Section 10 of the Food and Drugs Ordinance 1940, and cited as: The Food and Drugs (Wine) (Amendment) Regulations 1949—to give directions as to sealing and labelling of locally manufactured wines.

Government Notice No.269. Regulations made by the Director of Medical Services under Section 193 of the Public Health Ordinance 1925, and cited as: The Cemeteries (Amentment No. 2) Regulations 1949, to fix hours of attendance of cemetery keepers and to give directions for the keeping of account books.

Proclamation No. 9. Under subsection (2) of Section 96A of the Civil Status Ordinance 1890, to declare the whole of those portions of the districts of Port Louis and of Plaines Wilhems not set out in the 4th Schedule to the Civil Status Ordinance 1890 and the whole district of Moka to be areas to which Section 96A of the Civil Status Ordinance 1890 shall apply.

Proclamation No. 18. To amend Proclamation No. 9 of 1949, to declare that Section 96A of the Civil Status Ordinance 1890 shall not apply to certain areas of Moka District.

Proclamation No. 20. Further to amend Proclamation No. 9 of 1949, as amended by Proclamation No. 18 of 1949, the latter being revoked.

II. Laboratory Services

9. These consisted of the Central Laboratory at Réduit and two branch laboratories at Civil and Victoria hospitals. While the total number of examinations in the bacteriological laboratories showed a further increase this was confined to the Central Laboratory at Réduit. The examinations made at the branch laboratories showed a decrease due to temporary closing of that at Victoria due to illness of the officer in charge and to reduction of staff at the Civil Hospital branch for the same reason. In the chemical division the work increased considerably.

The report on the laboratory services is at Appendix I.

III. Medical Services

HOSPITALS

10. Progress in regard to the programme of building, supply of sanitary fittings and of standardising of equipment continued to be made.

Buildings—A third new ward was completed at Civil Hospital and a new female ward was opened at the Mental Hospital where a new male ward is also under construction. A sum of Rs. 350,000 has been provided for the building of a nurses' home at Civil Hospital. Repairs and redecoration of

wards at Civil Hospital were completed in 1948 and these are now well advanced in Victoria Hospital. Construction of the orthopaedic and rehabilitation centres at Candos is not yet started.

11. Wards in these general hospitals are now provided with water supply, wash hand basins, sinks, etc.

12. *Equipment.*—Provision of modern equipment is proceeding according to plan. Additional electric sterilizers and water heaters were provided and a considerable number of old beds were replaced by standard hospital bed-steads of modern design.

A new X-ray plant was installed at Victoria Hospital.

The Mauritius Branch of the British Red Cross Society generously presented to Civil Hospital a Radio set with two loud speakers. These have been installed and provide entertainment to a large number of patients.

13. *Personnel.*—The medical establishment was increased during the year by three medical officers. While this will in time give some relief to the medical staff it does not for the present ease the position to any appreciable extent as the opportunity has been taken to permit other medical officers, whose leave is long overdue, to take a well earned vacation. There are at present six medical officers on vacation leave in Europe of whom one is taking the course for the Diploma in Anaesthetics and another for that of Radiology and Radiotherapy.

Nursing staff.—The proposals made in 1944 for improvements in training and in conditions of service of nurses have made reasonably good progress. The course of training which was limited to two years incuding midwifery has been extended to three years for the general nursing certificate with an additional year for the midwifery qualification. Training schools exist in Civil and Victoria Hospitals where the students obtain theoretical and practical teaching. The urgent need is for sister-tutors whom it has not yet been possible to recruit despite the provision which exists for these posts in the Estimates. The institution of a 96–hours fortnight, together with provision of a snack meal and of transport to and from their residences, has done much to improve the conditions under which the nursing staff works ; periodic entertainments, where medical and nursing staff and their friends can meet together in a social spirit, are already producing evidence of a better appreciation by the public of the place in society to which members of the nursing profession are entitled, while on the other hand the members of the nursing staff are led to realise that membership of this profession can mean more to them than merely a source of livelihood. As, however, in the case of training there is an urgent need, namely the provision of Nurses' Homes where adequate facilities for study, recreation and rest can be provided.

There are at present 136 students under training of whom 40 are due to take the final nursing examination in April 1950.

14. *Radiology.*—The demand for X-ray examination and treatment continues to increase, the number of platings being 4526 and of screenings 3853 in 1949 as compared with a total in 1948 of 5775. Of the screenings 2563 were of the chest and 1290 of the alimentary tract. 145 patients underwent irradiation treatment with ultra-violet ray and 438 with infra-red, while 7

were treated by faradic current and 16 by surgical diathermy. The number of treatments by electricity appears relatively small but a large number of additional patients was so treated in the orthopaedic centre at Floreal Hospital.

Irregularity in supply of films was from time to time a source of considerable inconvenience. It was due in part to shipping difficulties but also to the 50 per cent increase over the previous year of demands for examinations. It has, on the other hand, been possible to increase the facilities for examination. Thus, in Civil Hospital, during most of the year the X-ray plant has been regularly used for patients in that hospital whereas in the past they had to be moved for that purpose to Victoria Hospital. The Civil Hospital plant has given reasonable satisfaction but it is of medium power and cannot be worked very hard. The portable set has also been fully utilised and cases have been operated upon under immediate radiological control. During the last four months of the year it was found possible to increase the number of sessions for radioscopy for out-patients from two to four per week.

15. *Orthopaedic Surgery.*—The Medical Superintendent of Floreal Hospital reports as folows:—

Personnel.—In April Mr. Fitton left the Colony on termination of contract. In rapid succession we lost three more members of the staff. Misses Hughes and Warn—the Physiotherapists—left in May, while Mr. Graham, the rehabilitation officer, departed in October, all on termination of contract.

We were fortunate enough to have Mr. Lingaya appointed to one of the vacant posts of physiotherapist, in July. When Mr. Graham left the Colony, Mr. Lingaya was appointed as Acting Rehabilitation Officer.

It must be noticed, therefore, that from October onwards there were two vacant posts of physiotherapists.

Details of work.—The following details are given as a summary of the work that has been done at this hospital and they may prove of interest:—

No. of patients in hospital : 31st December 1948	...	221
No. of patients in hospital : 31st December 1949	...	159

I.—Admissions during Calendar Year 1949

A.—Poliomyelitis :—			
(*a*) Acute cases	204		
(*b*) Old cases	72		
		276	
B.—Orthopaedic :—			
(*a*) Tuberculosis of the skeletal system	32		
(*b*) Injuries	5		
(*c*) Other Orthopaedic conditions—			
(i) Diseases of bones and joints	23		
(ii) Congenital deformities	16		
(iii) Miscellaneous	27		
		103	
Total		379	

II.—Operations

	Major	*Minor*	*Total*
In-patients	195	163	358
Out-patients	30	438	468
Total	225	601	826

III.—Total number of Patients wearing instruments under supervision

Polio cases	635
Orthopaedic cases	134

IV.—Attendances of patients at Doctor's consultations

Attendances	1,500	
Re-Attendances	3,394	
District Clinics (mostly re-attendances)	749	
Total	5,643	
A.—Poliomyelitis cases :	989	
B.—Orthopaedic cases :—		
(*a*) Tuberculosis	190	
(*b*) Injuries...	1,412	
(*c*) Miscellaneous	2,303	
		4,894
No. of patients seen at District Clinics (mostly re-attendances of Poliomyelitis cases ...		749
Total		5,643

Distribution of cases seen :—

Floreal Hospital	1,809
Victoria Hospital	1,679
Civil Hospital	1,406
District Clinics	749
Total	5,643

V.—Attendances at Physiotherapy Department

Attendances	314

VI. Waiting List for Admissions

	Adults	*Children*	*Total*
(*a*) Poliomyelitis	27	141	168
(*b*) Orthopaedic	177	80	257
	204	221	425

Other work.—Both the school and the occupational therapy departments continue to play an important part in the education and rehabilitation of the long term patients.

Work at other hospitals.—With the decrease in this hospital's staff it was necessary to curtail much work that was done at other hospitals. A weekly orthopaedic clinic at Moka Hospital, started in 1948, was stopped. Treatments by the physiotherapists and the rehabilitation officer at Victoria and Civil Hospials also came to an end during the year.

Weekly Orthopaedic Clinics at Civil and Victoria Hospitals were continued. Owing to various circumstances, but chiefly due to easier personal supervision, most of the operating work was done at Victoria Hospital where some 600 major and minor orthopaedic operations were performed.

During the year the first operation for a fracture of the neck of the femur was done at Victoria Hospital. This was made possible by the close collaboration of the radiologist. Owing to his suggestions and ingenuity it has been possible to reduce the operation time considerably. The first operation took three hours to perform. The present operation time is under one hour.

TABLE I

Report on Hospitals—(Calendar Year 1949)

Hospital	Patients remaining on 31.12.48	Admissions	Deaths	Patients remaining on 31.12.49	Number of beds	Number of patients on any date during period under review		Medical cases	Surgical cases	Number of operations performed	
						Maximum	Minimum			on in-patients	on out-patients
Civil	208	7,978	473	244	376	366	242	6,047	1,931	1,736	2,533
Long Mountain	41	1,522	30	24	65	67	24	1,222	300	97	216
Poudre d'Or	23	1,592	27	23	70	79	13	1,040	552	247	192
Flacq	26	2,479	80	19	86	93	19	1,602	877	379	155
Mahebourg	32	2,015	111	29	106	91	29	1,429	586	202	747
Souillac	53	2,272	66	30	103	118	30	1,677	595	150	138
Moka	28	1,733	77	31	83	295	155	1,174	559	559	720
Victoria	178	6,535	269	196	272	275	169	3,944	2,591	1,718	3,237
Mental (Infimary only)*	9	441	34	16	64	38	2	421	20	20	—
Industrial School	5	248	—	7	16	16	3	129	119	11	—
Beau Bassin Prisons	31	555	1	25	57	41	20	480	75	38	3
Floreal†	221	396	8	159	270	268	159	204	192	358	468
Leper	49	6	1	52	54	49	46	6	—	10	—
Totals	904	27,772	1,177	855	1,622	1,796	911	19,375	8,397	5,525	8,409

* Figures shown are for physical cases only. The Mental Hospital has a total bed strength of 653.

† Hospital for poliomyelitis and orthopaedic cases.

TABLE II

Statistics of Morbidity and Mortality (for Calendar Year 1949)

Cause Groups	Detailed List Numbers	Dispensaries			Hospitals					
		Cases Male	Cases Female	Total Cases	Male patients		Female patients		Total cases	Total deaths
					cases	dths.	cases	dths.		
1. Tuberculosis of respiratory system ...	001–008	252	175	427	373	70	169	12	542	82
2. Tuberculosis of meninges and central nervous system ...	010	—	—	—	3	1	1	1	4	2
3. Tuberculosis of intestines, peritoneum and mesenteric glands	011	3	—	3	8	3	9	—	17	3
4. Tuberculosis of bones and joints ...	012–013	3	3	6	32	2	24	—	56	2
5. Tuberculosis, all other forms ...	014–019	15	11	26	8	—	9	—	17	—
6. Congenital syphilis	020	43	34	77	8	3	8	1	16	4
7. Early syphilis ...	021	187	187	374	36	—	25	—	61	—
8. Tabes dorsalis ...	024	1	—	1	1	—	—	—	1	—
9. General paralysis of insane	025	—	—	—	—	—	—	—	—	—
10. All other syphilis	022–023 026–029	546	539	1,085	181	1	132	1	313	2
11. Gonococcal infection	030–035	560	98	658	87	—	12	—	99	—
12. Typhoid fever ...	040	—	—	—	151	26	104	14	255	40
13. Paratyphoid fever and other Salmonella infections ...	041–042	—	—	—	1	—	1	—	2	—
14. Cholera	043	—	—	—	—	—	—	—	—	—
15. Brucellosis (undulant fever)	044	—	—	—	—	—	—	—	—	—
16. Dysentery, all forms	045–048	1,862	1,417	3,279	245	7	84	4	329	11
17. Scarlet fever ...	050	—	—	—	—	—	—	—	—	—
18. Streptococcal sore throat	051	—	—	—	—	—	1	—	1	—
19. Erysipelas	052	4	2	6	6	—	10	1	16	1
20. Septicaemia and pyaemia	053	—	1	1	3	1	3	—	6	1
21. Diphtheria	055	21	24	45	31	6	49	13	80	19
22. Whooping cough ...	056	10	2	12	—	—	1	—	1	—
23. Meningococcal infections	057	—	—	—	1	—	1	1	2	1
24. Plague	058	—	—	—	—	—	—	—	—	—
25. Leprosy	060	—	—	—	3	1	1	—	4	1
26. Tetanus	061	3	3	6	53	21	34	13	87	34
27. Anthrax	062	—	—	—	—	—	—	—	—	—
28. Acute poliomyelitis	080	15	15	30	121	7	101	2	222	9
29. Acute infectious encephalitis ...	082	—	—	—	—	—	—	—	—	—
30. Late effects of acute poliomyelitis and acute infectious encephalitis	081, 083	2	1	3	7	—	4	—	11	—
31. Smallpox	084	—	—	—	—	—	—	—	—	—
32. Measles	085	5	5	10	14	—	3	—	17	—
33. Yellow fever ...	091	—	—	—	—	—	—	—	—	—

TABLE II—*continued*

STATISTICS OF MORBIDITY AND MORTALITY (for Calendar Year 1949)

Cause Groups	Detailed List Numbers	Dispensaries			Hospitals					To dtl
		Cases Male	Cases Female	Total Cases	Male patients		Female patients		Total cases	
					cases	dths.	cases	dths.		
A 34. Infectious hepatitis	092	55	43	98	10	3	9	—	19	
A 35. Rabies	094	—	—	—	—	—	—	—	—	
A 36. Typhus and other rickettsial diseases	100–108	—	—	—	—	—	—	—	—	
A 37. Malaria	110–117	16,800	17,897	34,697	469	28	335	15	804	
A 38. Schistosomiasis ...	123	251	110	361	67	—	16	—	83	
A 39. Hydatid diseases ...	125	—	—	—	—	—	—	—	—	
A 40. Filariasis	127	76	90	166	62	—	27	—	89	
A 41. Ankylostomiasis ...	129	4,453	5,558	10,011	212	2	186	—	398	
A 42. Other diseases due to helminths	124, 126 128, 130	6.690	7,105	13,795	54	—	48	—	102	
A 43. All other diseases classified as infective and parasitic	036–039, 049, 054, 059 063–074, 086–090, 093, 095, 096, 120–122, 131–138	3,395	2,452	5,847	151	—	72	1	223	
A 44. Malignant neoplasm of buccal cavity and pharynx	140–148	5	8	13	11	1	4	—	15	
A 45. Malignant neoplasm of oesophagus ...	150	—	—	—	4	2	2	2	6	
A 46. Malignant neoplasm of stomach	151	4		4	31	8	7	1	38	
A 47. Malignant neoplasm of intestine, except rectum	152, 153	—	—	—	2	1	2	—	4	
A 48. Malignant neoplasm of rectum	154	—	1	1	7	1	6	1	13	
A 49. Malignant neoplasm of larynx	161	—	—	—	2	1	—	—	2	
A 50. Malignant neoplasm of trachea, and of bronchus and lung not specified as secondary	162, 163	—	—	—	4	—	-	—	4	
A 51. Malignant neoplasm of breast	170	—	6	6	—	—	15	1	15	
A 52. Malignant neoplasm of cervix uteri ...	171	—	5	5	—	—	95	4	95	
A 53. Malignant neoplasm of other and unspecified parts of uterus	172–174	—	2	2	—	—	20	5	20	
A 54 Malignant neoplasm of prostate	177	—	—	—	1	1	—	—	1	
A 55. Malignant neoplasm of skin	190, 191	—	1	1	—	—	2	1	2	
A 56. Malignant neoplasm of bone and connective tissue	196, 197	2	—	2	1	—	1	—	2	

TABLE II—*continued*

STATISTICS OF MORBIDITY AND MORTALITY (for Calendar Year 1949)

Cause Groups	Detailed List Numbers	Dispensaries			Hospitals					
		Cases Male	Cases Female	Total Cases	Male patients		Female patients		Total cases	Total dths.
					cases	dths.	cases	dths.		
57. Malignant neoplasm of all other and unspecified site	155–159, 160, 164, 165, 175, 176, 178–181, 192–195, 198, 199	3	1	4	16	2	21	4	37	6
58. Leukæmia and aleukaemia	204	—	—	—	—	—	—	—	—	—
59. Lymphosarcoma and other neoplasm of lymphatic and haematopoietic system	200–203, 205	1	6	7	3	—	1	—	4	—
60. Benign neoplasms and neoplasms of unspecified nature	210–239	42	35	77	22	—	74	2	96	2
61. Nontoxic goiter ...	250, 251	1	4	5	—	—	—	—	—	—
62 Thyrotoxicosis with or without goiter ...	252	—	—	—	—	—	—	—	—	—
63. Diabetes mellitus ...	260	75	204	279	60	5	89	1	149	6
64. Avitaminosis and other deficiency states ...	280–286	1,357	2,470	3,827	230	10	237	12	467	22
65. Anaemias	290–293	4,225	15,207	19,432	591	29	929	41	1,520	70
66. Allergic disorders; all other endocrine, metabolic and blood diseases	240–245, 253, 254 270–277 287–289 294–299	1,950	1,940	3,890	273	7	172	3	445	10
67. Psychoses	300–309	2	3	5	88	—	73	—	161	—
68. Psychoneuroses and disorders of personality	310–324, 326	15	39	54	53	1	32	—	85	1
69. Mental deficiency ...	325	10	6	16	22	—	21	—	43	—
70. Vascular lesions affecting central nervous system ...	330–334	60	51	111	69	14	33	8	102	22
71. Nonmeningococcal meningitis	340	—	1	1	12	5	11	3	23	8
72. Multiple sclerosis ...	345	—	—	—	1	—	1	—	2	—
73. Epilepsy	353	125	159	284	48	—	23	2	71	2
74. Inflammatory diseases of eye	370–379	1,755	1,784	3,539	96	—	72	1	168	1
75. Cataract	385	223	277	500	103	—	115	—	218	—
76. Glaucoma	387	17	27	44	8	—	10	—	18	—
77. Otitis media and mastoiditis	391–393	1,135	1,264	2,399	38	—	32	—	70	—
78. All other diseases of the nervous system and sense organs ..	341–344, 350–352 354–369 380–384, 386, 388–390, 394–398	3,432	3,821	7,253	292	4	203	3	495	7

TABLE II—*continued*

STATISTICS OF MORBIDITY AND MORTALITY (for Calendar Year 1949)

Cause Groups	Detailed List Numbers	Dispensaries			Hospitals					
		Cases Male	Cases Female	Total Cases	Male patients		Female patients		Total cases	To dea
					cases	dths.	cases	dths.		
A 79. Rheumatic fever ...	400–402	13	9	22	7	—	12	1	19	
A 80. Chronic rheumatic heart disease ...	410–416	6	7	13	9	1	23	1	32	
A 81. Arteriosclerotic and degenerative heart disease	420–422	56	89	145	39	13	38	5	77	
A 82. Other diseases of heart	430–434	256	459	715	123	42	99	25	222	
A 83. Hypertension with heart disease ...	440–443	34	68	102	53	14	23	9	76	
A 84. Hypertension without mention of heart	444–447	124	207	331	31	2	16	2	47	
A 85. Diseases of arteries	450–456	92	130	222	75	9	28	2	103	
A 86. Other diseases of circulatory system	460–468	638	588	1,226	214	3	80	1	294	
A 87. Acute upper respiratory infections	470–475	503	646	1,149	49	—	63	1	112	
A 88. Influenza	480–483	2,335	14,471	26,806	371	—	218	3	589	
A 89. Lobar pneumonia	490	34	10	44	192	13	71	10	263	
A 90. Bronchopneumonia	491	25	11	36	111	19	77	20	188	
A 91. Primary atypical, other and unspecified pneumonia...	492, 493	23	12	35	84	1	23	–	107	
A 92. Acute bronchitis ...	500	809	732	1,541	104	2	113	1	217	
A 93. Bronchitis, chronic and unqualified ...	501, 502	1,524	1,091	2,615	323	14	183	4	506	
A 94. Hypertrophy of tonsils and adenoids	510	344	797	1,141	43	–	63	—	106	
A 95. Empyema and abscess of lung ...	518, 521	20	6	26	17	2	6	1	23	
A 96. Pleurisy	519	45	30	75	76	—	29	1	105	
A 97. All other respiratory diseases	511–517, 520 522–527	1,141	537	1,678	83	6	48	3	131	
A 98. Diseases of teeth and supporting structures	530–535	12,006	12,908	24,914	76	—	83	—	159	
A 99. Ulcer of stomach...	540	26	—	26	24	5	6	1	30	
A 100. Ulcer of duodenum	541	144	17	161	157	10	11	2	168	
A 101. Appendicitis ...	550–553	57	105	162	126	2	184	1	310	
A 102. Intestinal obstruction and hernia	560, 561, 570	164	18	182	217	13	23	2	240	
A 103. Gastritis and duodenitis	543	642	830	1,472	61	1	45	1	106	
A 104. Gastro-enteritis and colitis, except diarrhoea of the newborn	571, 572	2,621	2,489	5,110	217	18	147	19	364	
A 105. Cirrhosis of liver	581	21	22	43	18	—	20	1	38	
A 106. Cholelithiasis and cholecystitis ...	584, 585	150	165	315	41	1	57	—	98	

TABLE II—*(continued)*

STATISTICS OF MORBIDITY AND MORTALITY (for Calendar year 1949)

Cause Groups	Detailed List Numbers	Dispensaries			Hospitals					
		Cases Male	Cases Female	Total Cases	Male patients		Female patients		Total cases	Total deaths
					cases	dths.	cases	dths.		
107. Other diseases of digestive system	536–539 542, 544, 545 573–580, 582, 583, 586, 587	11,152	12,650	23,802	668	25	377	6	1,045	31
108. Acute nephrits ...	590	29	29	58	6	—	13	—	19	—
109. Chronic, other and unspecified nephritis	591–594	157	180	337	104	18	97	16	201	34
110. Iufections of kidney	600	36	40	76	23	3	26	2	49	5
111. Calculi of urinary system	602, 604	15	9	24	24	—	11	—	35	—
112. Hyperplasia of prostate	610	5	—	5	15	3	—	—	15	3
113. Diseases of breast	620, 621	—	303	303	—	—	57	—	57	—
114. Other diseases of genito-urinary system	601, 603 605–609 611–617 622–637	1,563	4,012	5,575	594	5	609	4	1,203	9
115. Sepsis of pregnancy childbirth and the puerperium ...	640, 641, 681 682, 684	—	10	10	–	—	16	—	16	—
116. Toxaemias of pregnancy, and the puerperium	642, 652 685, 686	—	21	21	—	—	73	14	73	14
117. Haemorrhage of pregnancy and childbirth ...	643, 644 670–672	—	4	4	—	—	53	9	53	9
118. Abortion without mention of sepsis or toxaemia ...	650	—	121	121	—	—	321	2	321	2
119. Abortion with sepsis	651	—	—	—	—	—	17	2	17	2
120. Other complications of pregnancy, childbirth and the puerperium	645–649 673–680, 683 687–689	—	2,097	2,097	—	—	985	43	985	43
121. Infections of skin and subcutaneous tissue	690–698	6,994	4,898	11,892	1,131	6	661	2	1,792	8
122. Arthritis and spondylitis	720–725	371	425	796	109	—	104	1	213	1
123. Muscular rheumatism and rheumatism, unspecified ...	726, 727	3,837	5,933	9,770	139	—	105	—	244	—
124. Osteomyelitis and periostitis	730	23	6	29	78	2	36	1	114	3
125. Ankylosis and acquired musculoskeletal deformities	737 745–749	23	9	32	13	—	4	—	17	—

TABLE II—*(continued)*

STATISTICS OF MORBIDITY AND MORTALITY (for Calendar Year (1949)

	Cause Groups	Detailed List Numbers	Dispensaries			Hospitals					
			Cases Male	Cases Female	Total Cases	Male patients		Female patients		Total cases	Tot dea
						cases	dths.	cases	dths.		
A	126. All other diseases of skin and musculoskeletal system	700–716 731–736 738–744	4,200	3,631	7,831	328	2	163	4	491	
A	127. Spina bifida and meningocele ...	751	—	—	—	1	—	2	—	3	
A	128. Congenital malformations of circulatory system...	754	—	—	—	—	—	1	—	1	
A	129. All other congenital malformations	750, 752 753 755–759	7	5	12	11	1	14	2	25	
A	130. Birth injuries ...	760, 761	—	—	—	6	5	14	6	20	
A	131. Postnatal asphxia and atelectasis ...	762	—	—	—	11	10	4	4	15	
A	132. Infections of the newborn ...	763–768	85	87	172	6	1	5	2	11	
A	133. Haemolytic disease of newborn	770	1	2	3	1	1	—	—	1	
A	134. All other defined diseases of early infancy	769, 771 772	4	—	4	11	8	16	13	27	
A	135. Ill-defined diseases peculiar to early infancy, and immaturity unqualified	773–776	18	21	39	42	35	46	33	88	
A	136. Senility without mention of psychosis ...	794	100	192	292	33	7	32	2	65	
A	137. Ill-defined and unknown causes of morbidity and mortality	780–793 795	2,512	3,130	5,642	228	23	210	10	438	
AE	138. Motor vehicle accidents	E 810–E 835	113	27	140	164	16	30	1	194	
AE	139. Other transport accidents	E 800–E 802 E 840–E 866	292	42	334	191	8	50	2	241	
AE	140. Accidental poisoning	E 870–E 895	12	11	23	46	2	32	—	78	
AE	141. Accidental falls	E 900–E 904	2.602	901	3,503	542	12	165	1	707	
AE	142. Accident caused by machinery ...	E 912	127	11	138	54	1	3	—	57	
AE	143. Accident caused by fire and explosion of combustible material ...	E 916	47	13	60	17	2	11	3	28	
AE	144. Accident caused by hot substance, corrosive liquid, steam, and radiation	E 917, E 918	247	119	366	94	10	56	6	150	
AE	145. Accident caused by firearm ...	E 919	2	2	4	9	—	1	—	10	

TABLE II—*continued*

STATISTICS OF MORBIDITY AND MORTALITY (for Calendar Year 1949)

Cause Groups	Detailed List Numbers	Dispensaries			Hospitals					
		Cases Male	Cases Female	Total Cases	Male patients		Female patients		Total cases	Total deaths
					cases	dths.	cases	dths.		
146. Accidental drowning and submersion	E 929	—	—	—	1	—	1	—	2	—
147. All other accidental causes	E 910, E 911 E 913–E 915 E 920–E 928 E 930–E 965	10,308	2,426	12,734	1,244	10	297	5	1,541	15
148. Suicide and self-inflicted injury	E 970–E 979	—	—	—	36	5	25	3	61	8
149. Homicide and injury purposely inflicted by other persons (not in war)	E 980–E 985	426	128	554	494	—	151	—	645	—
150. Injury resulting from operations of war	E 990–E 999	—	—	—	1	1	—	—	1	1
138. Fracture of skull	N 800–N 804	4	—	4	58	21	5	—	63	21
139. Fracture of spine and trunk	N 805–N 809	33	11	44	67	5	5	—	72	5
140. Fracture of limbs	N 810–N 829	479	167	646	414	5	138	3	552	8
141. Dislocation without fracture	N 830–N 839	35	15	50	35	—	14	—	49	—
142. Sprains and strains of joints and adjacent muscles	N 840–N 848	216	70	286	56	—	7	—	63	—
143. Head injury (excluding fracture)	N 850–N 856	951	226	1,177	271	1	73	1	344	2
144. Internal injury of chest, abdomen, and pelvis	N 860–N 869	3	3	6	20	12	2	2	22	14
145. Laceration and open wounds	N 870–N 908	4,769	882	5,651	736	1	132	1	868	2
146. Superficial injury, contusion and crushing with intact skin surface	N 910–N 929	5,743	1,569	7,312	879	—	244	—	1,123	—
147. Effects of foreign body entering through orifice	N 930–N 936	319	66	385	24	—	7	—	31	—
148. Burns	N 940–N 969	321	157	478	119	14	74	11	193	25
149. Effects of poisons	N 960–N 979	8	6	14	64	6	48	2	112	8
150. All other and unspecified effects of external causes	N 950–N 959 N 980–N 999	1,295	508	1,803	150	2	73	1	223	3
TOTAL ...		128,852	141,043	269,895	13,902	687	10,465	490	24,367	1,177

NOTE :—Conditions classifiable under section " Accidents, Poisonings and Violence " have been coded e : in sub-section " AE " where the conditions are classified according to External Cause and in sub- on " AN " where they are classified according to Nature of Injury.

The above figures for hospitals do not include " Delivery without compilation " (1,469 cases) which ld bring the total number of cases treated in hospital to 25,836.

16. A summary of reports on hospitals is given in Tables I and II.

17. *Mental Hospital.*—The report on the work of this hospital is at appendix II.

Dispensaries

18. A new dispensary was opened at Goodlands making a total of 32 stationary dispensaries in the colony. In addition the mobile dispensary service calls weekly at twenty three more remote villages. The mobile dispensaries have a staff consisting of a medical officer, a dresser and a driver and are well stocked with drugs, etc. These units made 444 trips in 1949 and were attended by 35,931 patients. Total attendances at stationary dispensaries and at out-patient departments of hospitals numbered 374,207.

IV. Health Services

PUBLIC HEALTH

19. The recrudescence of acute poliomyelitis in epidemic from which occurred in the latter weeks of 1948 gave rise to 370 new cases in the first three months of 1949. The disease appeared in Rodriguez for the first time in January but while many abortive cases were notified only 5 developed paralysis.

The incidence of malaria showed a further remarkable reduction and the deaths ascribed to this disease numbered 936 as compared with 1580 in 1948.

The number of patients treated in hospital was 27,772 as compared with 28,081 in 1948, and in dispensaries 269,895.

The number of cases of malignant disease admitted to hospital was 258. Deaths from cancer (all forms) and from cancer of the uterus during the ten-year period 1940 to 1949 were as follows:—

Year	*Death from cancer (all forms)*	*Death from cancer of the uterus*
1940	55	11
1941	52	14
1942	51	10
1943	36	8
1944	46	7
1945	47	12
1946	52	9
1947	68	11
1948	77	13
1949	118	19

There was a marked increase in the number of deaths from cancer of the digestive organs and peritoneum, 67 in 1949 compared with 33 in the previous year.

Compulsory medical certification of death which had been instituted in 1948 in respect of the towns of Port Louis, Beau Bassin—Rose Hill, Quatre Bornes and Curepipe was extended in 1949 to include the entire districts of Port Louis, Plaines Wilhems and Moka, the measure now applying to a little more than 50 per cent of the Colony's population.

Notification of tuberculosis in all its forms was made compulsory in the course of the year.

VITAL STATISTICS

(i) Population

20. The estimated population of Mauritius at at 31st December, 1949, was 456,717, exclusive of 10,664 pioneers in military employment overseas.

The natural increase, that is due to excess of births over deaths, in 1949 was 13,088. In the general population (including Chinese) this increase was 3,548 and in the Indian 9,540 while arrivals in the Colony exceeded departures by 64 and 112 respectively. The density of population was 634·3 per square mile.

The population at 31st December, 1949, was sub-divided as follows:—

Population	*Males*	*Females*	*Number of males per 1,000 females*
General (excluding chinese) ...	70,832	80,442	920
Chinese	8,289	5,564	
Indian	147,409	144,181	1,022
Whole Population ...	226,530	230,187	984

The estimated mid-year population on which all rates are based is 444,521.

(ii) Births

21. The total number of live births was 20,472, an increase of 1433 on the number for 1948 and of 4,258 on the yearly average of births for the ten years preceding 1949:—

Population	*Births*			*Male births per 1,000 females births*
	Males	*Females*	*Total*	
General (including chinese) ...	3,052	2,947	5,999	1,036
Indian	7,305	7,168	14,473	1,019
Whole Population ...	10,357	10,115	20,472	1,024

The following are the birth rates, the figures in brackets relating to 1948:—

General Population	37·3	(35·8)
Indian Population	51·0	(47·3)
Total Population	46·0	(43·1)

22. Stillbirths, which are not included as either births or deaths, numbered 1364 (720 males and 644 females), the percentage of stillbirths to live births being 6·7 as compared with 6·9 in 1948 and an average of 7·6 in the five years prior to 1949.

(iii) Deaths

23. Deaths registered in Mauritius numbered 7,384 corresponding to a rate of 16·60 per 1000 of the population, the lowest on record. The month of maximum mortality was August with 718 deaths. In 1948 the highest figure was recorded in March:—

	Population					
	General		*Indian*		*Total*	
	Males	*Females*	*Males*	*Females*	*Males*	*Females*
Number of deaths	1,270	1,181	2,529	2,404	3,799	3,585
Rates per 1,000	15·2		17·4		16·6	
	(21·3)		(25·2)		(23.8)	

(The figures in brackets are the rates for 1948)

The average death rates for the period 1940–49 were 23·0 for the general, 27·5 for the Indian and 25·9 for the whole population. The annual birth and death rates for this period are shown in graph A.

24. Table III gives a comparison of the causes of death for the past five years with the rates per 1,000 of the population.

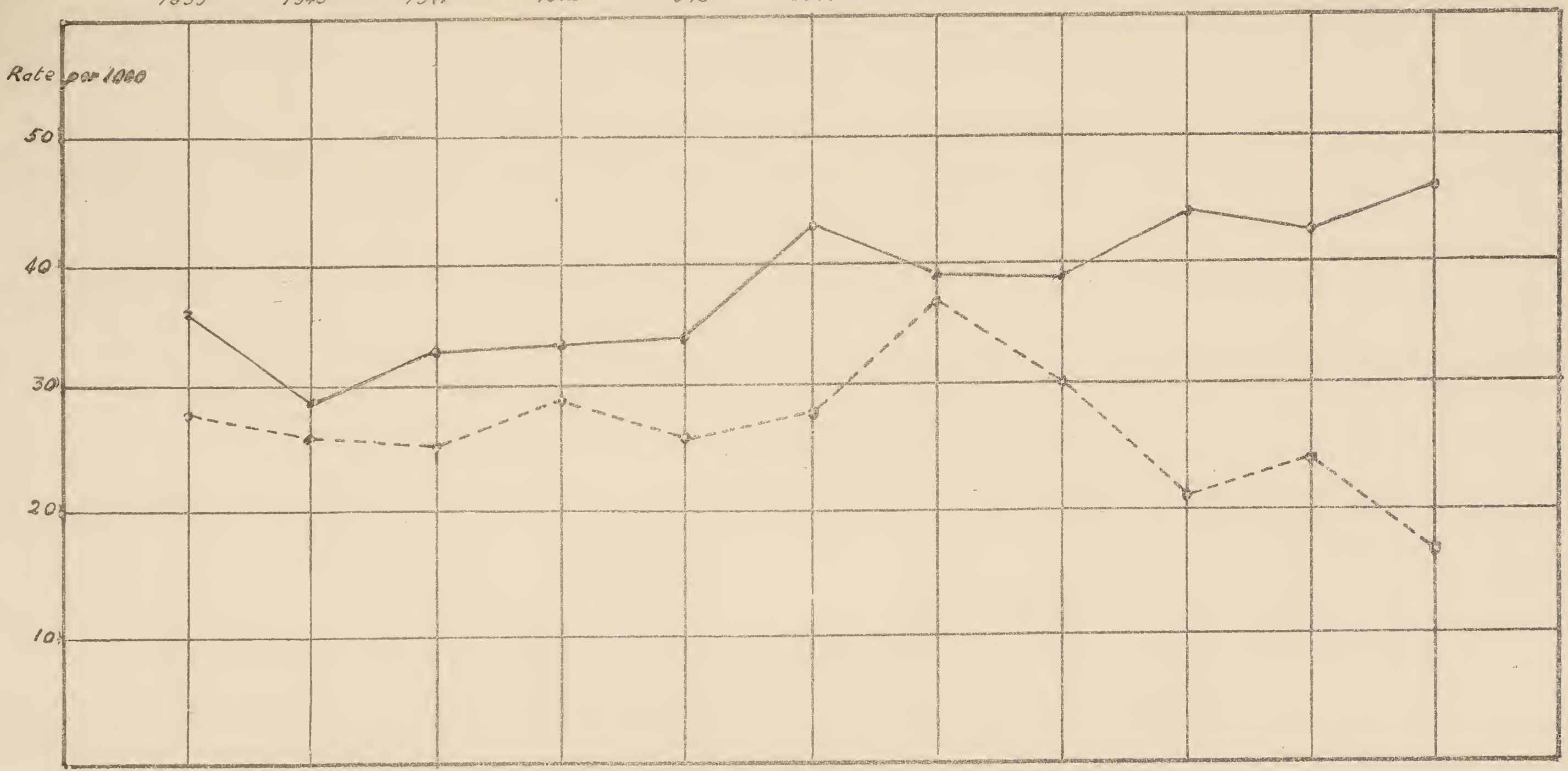
TABLE III

Group	*No. of Deaths 1949*	*Rates per 1,000*				
		1949	*1948*	*1947*	*1946*	*1945*
1. Infective and parasitic diseases	1,603	3·60	9·2	5·47	9·1	11·6
2. Cancer and other tumours	121	0·27	0·2	0·17	0·1	0·1
3. Rheumatism, diseases of nutrition	127	0·28	0·3	0·26	0·3	0·4
4. Diseases of of the blood and blood forming organs	470	1·05	1·0	1·33	2·0	2·1
5. Chronic poisoning and intoxication	—	—	—	—	—	—
6. Diseases of the nervous system and sense organs	365	0·82	0·8	0·78	1·0	0·9
7. Diseases of the circulatory system	381	0·85	0·6	0·48	0·6	0·6
8. Diseases of the respiratory system	831	1·87	3·0	2·06	2·7	3·6
9. Diseases of the digestive system	1,085	2·21	2·4	2·37	4·6	5·4
10. Diseases of the urinary and genital system (non venereal or connected with pregnancy or the puerperium	286	0·64	0·6	0·69	1·2	1·3
11. Diseases of pregnancy and childbirth and the puerperal state	83	—	—	—	—	—
12. Diseases of the skin and cellular tissue ...	23	0·05	0·1	0·11	0·2	0·2
13. Diseases of bones and organs of movement ...	6	0·01	—	—	—	—
14. Congenital malformations	5	—	—	—	—	—
15. Diseases peculiar to the first year of life ...	842	1·89	2·3	2·61	2·8	3·4
16. Senility, old age	226	0·50	0·6	0·88	1·2	1·4
17. Death from violence	189	0·42	0·4	0·40	0·4	0·6
18. Ill-defined causes of death	741	1·66	1·9	2·17	3·0	3·8

GRAPH A.

Births _____
Deaths - - - - - -

BIRTH AND DEATH RATES PER 1,000 FROM 1939-1949



DEATHS PER 1,000 OF THE POPULATION FROM PRINCIPAL CAUSES 1940-1949

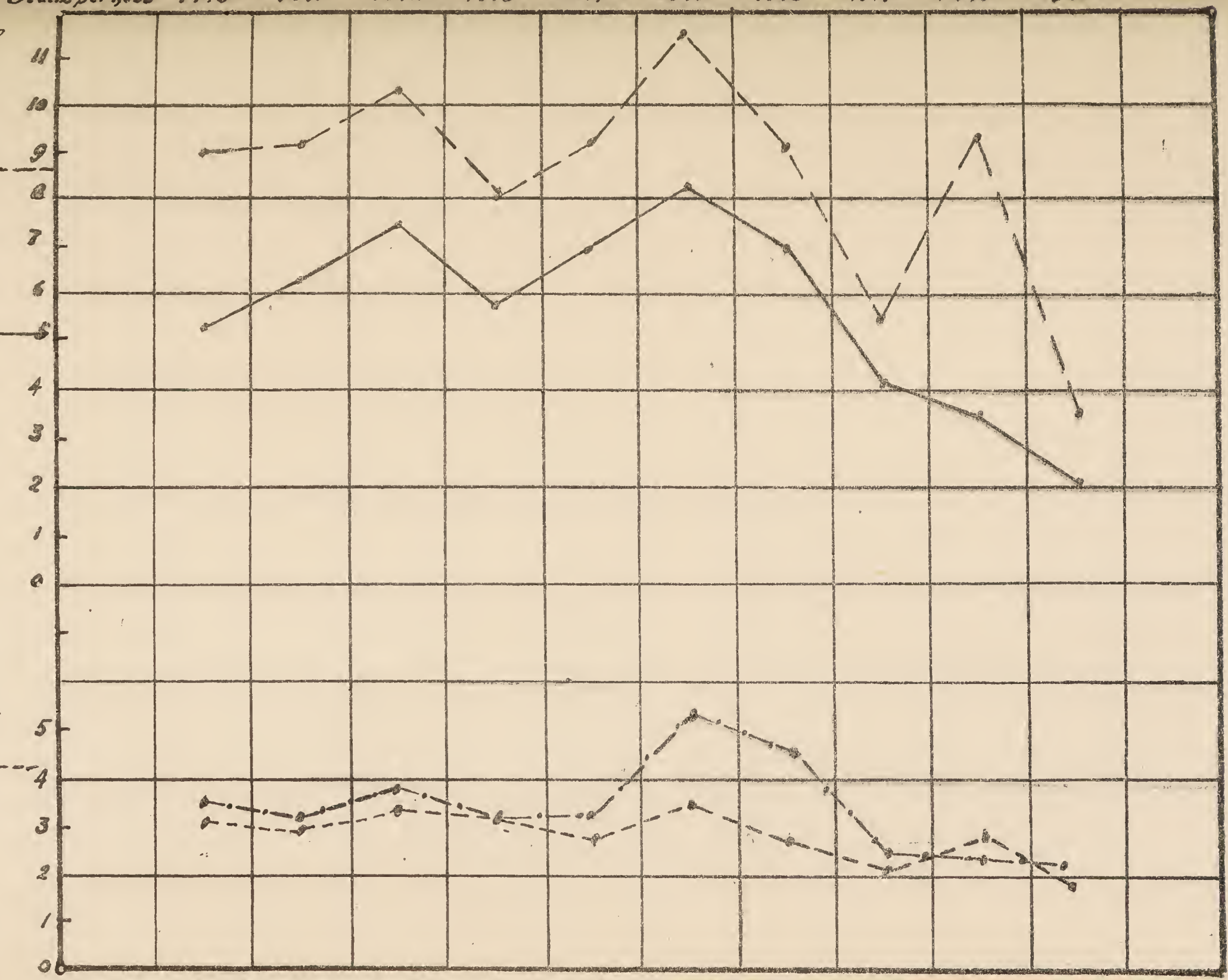
Deaths per 1,000 of Population for the years 1940 to 1949. Ascribed to:-

GROUP 1.
Infective and Parasitic Diseases including Malaria - - - -

Malaria & Malarial Cachexia ——

GROUP IX.
Diseases of the Digestive System -.-.-.-.-.-

Diseases of the Respiratory System (Group VIII) - - - - - -



25. The percentage contributions to the total deaths made by the more important groups are shown below:—

TABLE IV

Group	*Percentage of total deaths Five years 1945–1949*				
	1949	*1948*	*1947*	*1946*	*1945*
1. Infective and parasitic diseases	21·7	38·5	27·2	30·8	32·0
4. Diseases of the blood and bloodforming organs ...	6·3	4·2	6·6	6·6	5·8
6. Diseases of the nervous system and sense organs ...	5·1	3·5	3·9	3·2	2·6
7. Disecses of the circulatory system 16. Senility, old age	5 1	5·5	6·7	5·8	5 3
8. Diseases of the respiratory system	11·2	12·5	10·2	9·0	10·0
9. Diseases of the digestive system	14·7	10·2	11·8	15·7	14 9
15. Diseases peculiar to the first year of life	11·4	9·5	13.0	9·5	9·3

26. The decline in the percentage of mortality due to infective and parasitic diseases which had been apparent in recent years continued during 1949, the principal diseases responsible for this fall being malaria, whooping cough, dysentery and typhoid fever ; deaths from this group of disease feil to 3·60 per 1,000 living.

27. Diseases of the respiratory system (excluding tuberculosis) accounted for 11·2 per cent of the total deaths as compared with 12·5 per cent in 1948 and an average of 11·9 during the past ten years. The comparatively high figure for 1948 was the result of complications of whooping cough which assumed epidemic proportions in that year.

28. The deaths due to diseases of the digestive system, which include enteritis and diarrhoea, while occupying a higher place in the causes of mortality, show an appreciable reduction from previous years—2·21 per 1,000 living as compared with an average of 3.59 for the preceding five years.

29. The same holds true of diseases peculiar to the first year of life, the rate per 1,000 living in 1949 being 1·89 as compared with 2·79 in the period 1944 to 1948.

30. The downward trend of these, the principal death-dealing diseases in Mauritius, is illustrated in graph B.

31. Diseases of pregnancy, childbirth and the puerperal state. 83 deaths were registered in this group, classified as under:—

Post abortive infection	--
Abortion without mention of septic conditions	1
Ectopic gestation	—
Haemorrhage of pregnancy	—
Toxaemias of pregnancy	—
Other diseases and accidents of pregnancy	20
Haemorrhage of childbirth	—
Infection during childbirth and the puerperium	—
Puerperal toxaemias	4
Other accidents of childbirth	22
Other or unspecified conditions of childbirth and the puerperium	36

The maternal mortality rate (the number of deaths ascribed to the puerperal state per 1,000 births including stillbirths) was 3·80. The rates for the previous five years were as follows:—

1944	8·73
1945	14·97
1946	10·39
1947	5·25
1948	4·13

32. Population, birth and death rates, and deaths from principal causes are given in Table V.

TABLE V

POPULATION, BIRTH AND DEATH RATES, AND DEATHS FROM PRINCIPAL CAUSES BY DISTRICTS DURING THE YEAR 1949.

Districts	*Mid-year Population*	*Birth rate*	*Death rate*	*Malaria*	*Dysentery*	*Enteritis and Diarrhoea*	*Tuberculosis*	*Diseases of Respiratory system*	*Debility and Old age**
Port Louis	70,921	46·5	16·4	60	4	109	105	141	32
Pamplemousses ...	34 880	45·7	17·7	109	6	85	36	58	27
Rivière du Rempart	36,805	54·8	16·0	97	6	115	11	52	26
Flacq	52,174	45·9	18·0	270	11	99	17	87	53
Grand Port ...	47,485	48·0	18·6	120	5	93	19	104	85
Savanne	33,667	45·9	19·2	71	6	54	16	54	109
Plaines Wilhems ...	132,124	41·9	13·7	69	20	243	71	265	74
Moka	24,460	50·6	19·5	26	4	72	15	58	18
Black River ..	12,005	39·0	20·7	114	3	15	11	12	3
WHOLE COLONY ...	444,521	46·0	16·6	936	65	885	301	831	427

INFANT AND CHILD MORTALITY

33. The infantile mortality rate (that is, the number of deaths of infants under one year of age, occurring in any year for every thousand live births registered the same year) was 91·0 per 1,000 as compared with 181·5 in 1948 and an average of 152·8 per 1,000 over the 10 year period 1939 to 1948.

34. The deaths under five years of age were distributed as follows:—

Age	*Males*	*Females*	*Total*
Under 3 months	698	566	1,264
3 months and under 6 months	142	129	271
6 ,, ,, 1 year	167	161	328
1 year and under 2 years	199	230	429
2 years ,, 3 years	127	154	281
3 years ,, 4 years	58	61	119
4 years ,, 5 years	44	36	80
TOTAL	1,435	1,337	2,772

The principal causes of death in children under five years of age were in the following categories:—

Group	*under one year*	*one year and under 5 years*
Infective and parasitic diseases	285	299
Diseases peculiar to the first year of life ...	842	—
Diseases of the Digestive System	331	255
Diseases of the Respiratory System	220	133

* Excluding Congenital Debility.

Communicable and Infectious Diseases

35. Malaria and antimalarial measures.

In the annual report of the department for 1948 a brief account was given of the antimalarial measures which had been undertaken and of the results which had been achieved since 1942, that is, prior to the adoption in January 1949 of incesticidal methods directed against the adult anopheline mosquito. The striking fall in spleen and parasite rates, in admissions to hospital on account of malaria and in the general death rate and malaria mortality rate in the districts in which operations were undertaken afford ample evidence of the remarkable degree to which malaria can be controlled by these antilarval measures alone. Reference was made in the same report to the initiation with the co-operation of the Colonial Insecticides Committee of an experiment designed to determine whether malaria and if possible its mosquito vectors can be eradicated from the island by means of house spraying with residual insecticides. The research team began operations in January 1949, and while the officer-in-charge has prepared a detailed report of progress during the year it will be of interest to note here some of the facts and findings recorded to date.

36. Three insecticides were used in five per cent solution—In Zone I, D.D.T. 80 per cent para. para. in Kerosene, in Zone II D.D.T. 5 per cent wettable powder and in Zone III B.H.C. (Gammexane 5 per cent wettable powder various types of hand and power sprayers being used. The initial spraying was done during the period January to March. The number of rooms (this term including barns, cowsheds, churches, temples, etc.), treated was 376,998 affecting 324,181 inhabitants. Part of the central plateau was not sprayed, being free from vector mosquitoes. During the second spraying from mid-August to mid-December 1949, a larger area in the central plateau and also the central areas of Port Louis and Mahebourg were omitted since no anophelines had been found since the initial spraying. On this occasion 223,725 rooms were sprayed affecting 188,750 inhabitants. The cost of both sprayings was Rs. 1.47 per room and Rs. 1.75 per inhabitant but if, as apparently has been the case, the protection has had a colony-wide effect the cost per head of population was 99 cents.

The results of spraying were under constant observation by means of routine adult mosquito catching in control stations of which some 3,500 were set up throughout the island. The efficiency of the insecticides was regularly controlled chemically both on opening of the original containers and by sampling of suspensions prepared in the districts. Surface treatment was also checked by means of test papers on walls. The range of variation of D.D.T. or B.H.C. about the required mean of 100–200 mgms. per square feet was remarkably low.

37. It seemed at first that B.H.C. might prove to be the insecticide of choice as the numbers of anophelines diminished rapidly after its application but within five to six weeks the numbers began to increase and it became evident towards the end of the year that much more frequent applications of this insecticide would be required than the credits available permitted. Consequently the use of this preparation was discontinued.

A detailed account of the entomological findings is given in the Entomologist's report in appendix I. The outstanding features are that, apart from two small well-defined areas, A. funestus has disappeared in both adult and larval forms but that A. gambiae, while not found indoors in adult form, began to breed prolifically in all coastal areas when the summer rains set in. There seems therefore to be good reason to believe that eradication of A. funestus, probably the more important species of vector, may with reason be expected but that in the case of A. gambiae D.D.T. has a repellent action and that eradication of this species by residual insecticides will not materialize ; nor can this absence from houses be attributed to faulty catching since, despite the fact that meteorological conditions in the summer of 1949–50 were conducive to a severe epidemic of malaria, the incidence of this disease reached a new low level. It seems to be established, however, that in Mauritius anti-adult measures are not in themselves sufficient but should be used as a supplement to an attack on the larval forms of mosquitoes.

38. The programme of antimalarial works and maintenance continues to be followed in the districts of Plaines Wilhems, Moka, Port Louis and Pamplemousses.

Plaines Wilhems. In the southern part of this district the major works are almost completed while in the central area they are finished. In the northern section, the work started last year on the Bosquet canal has progressed favourably and should be completed in 1950. This collector is designed to carry off all waste and storm water which, due to lack of outfall, was a perennial cause of mosquito breeding around the town of Rose Hill—Beau Bassis. Conditions necessitated the construction of a canal of over 8,000 feet in length, frequently through solid rock.

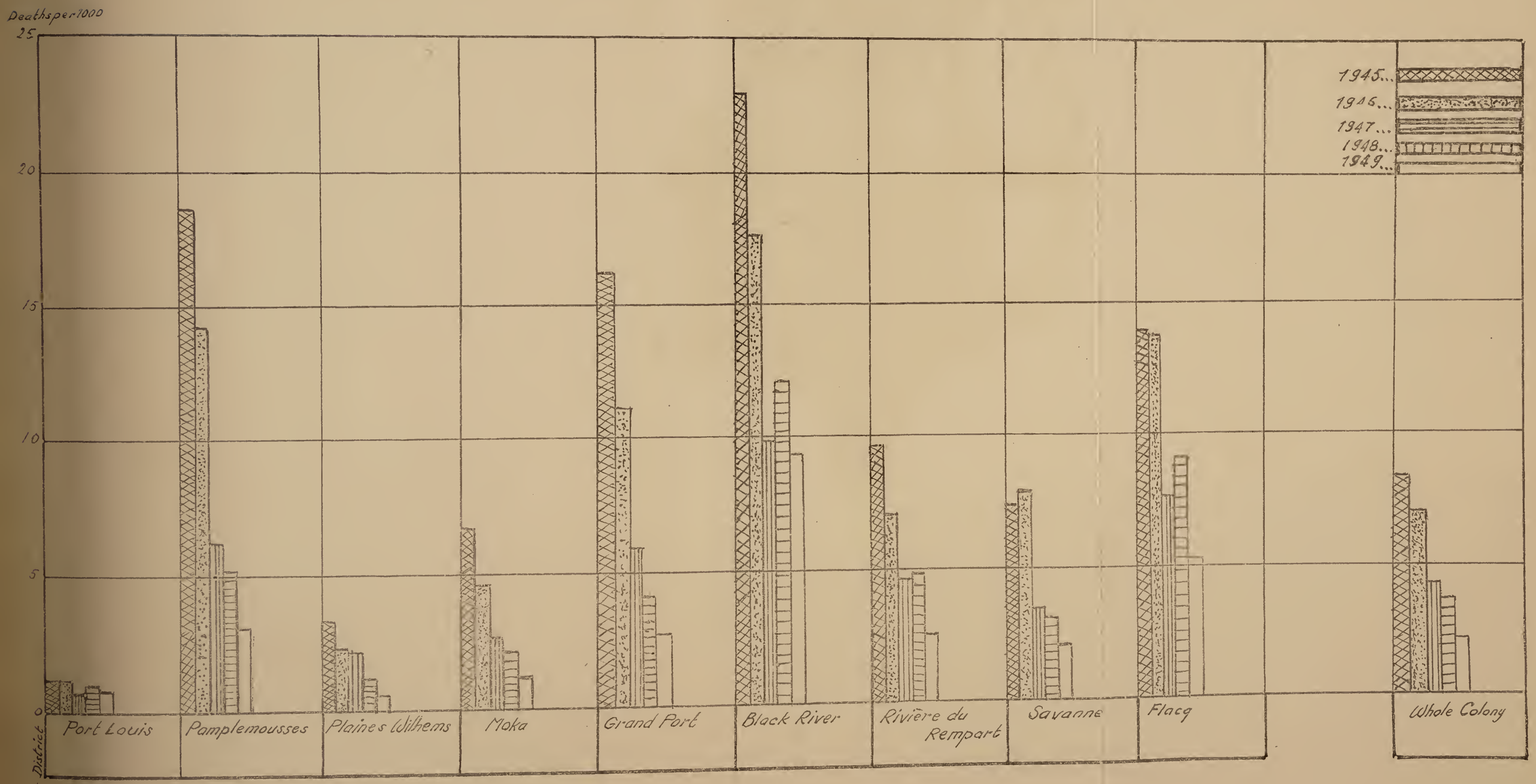
In Moka, the population is largely concentrated in the north western part of the district and here the works should be completed by the end of 1950. There will then remain the central part of the district including the villages of Verdun, Alma and Quartier Militaire.

Port Louis. With completion of the canalising of St. Louis River, and the filling of the salt pans in Cassis the work on the south western side of the town is finished, while that on the River Latanier is approaching completion. The building activity to be seen in the Cassis area, previously almost abandoned, is evidence of the improvement in health conditions in this locality.

The draining of the Beau Plan marshes in Pamplemousses district has been the largest antimalarial project yet undertaken in Mauritius. These marshes covering an area of fifty acres provided perennial and prolific breeding grounds which were in large part responsible for the very low standard of living and of health in this district. In order to provide sufficient fall for drainage it was necessary to canalise and to regrade the River Citron, the natural outlet, for a distance of about two miles and, with the ultimate object in view of draining the marshes, this work was started in 1944. It has now been completed, parts of the fifty acres reclaimed are under cultivation and part is being converted into a sports ground for the local inhabitants. This

GRAPH C.

DEATHS FROM MALARIA BY DISTRICTS - PER 1,000 POPULATION



GRAPH D.

ADMISSION TO HOSPITAL - MALARIA - 1939-1949

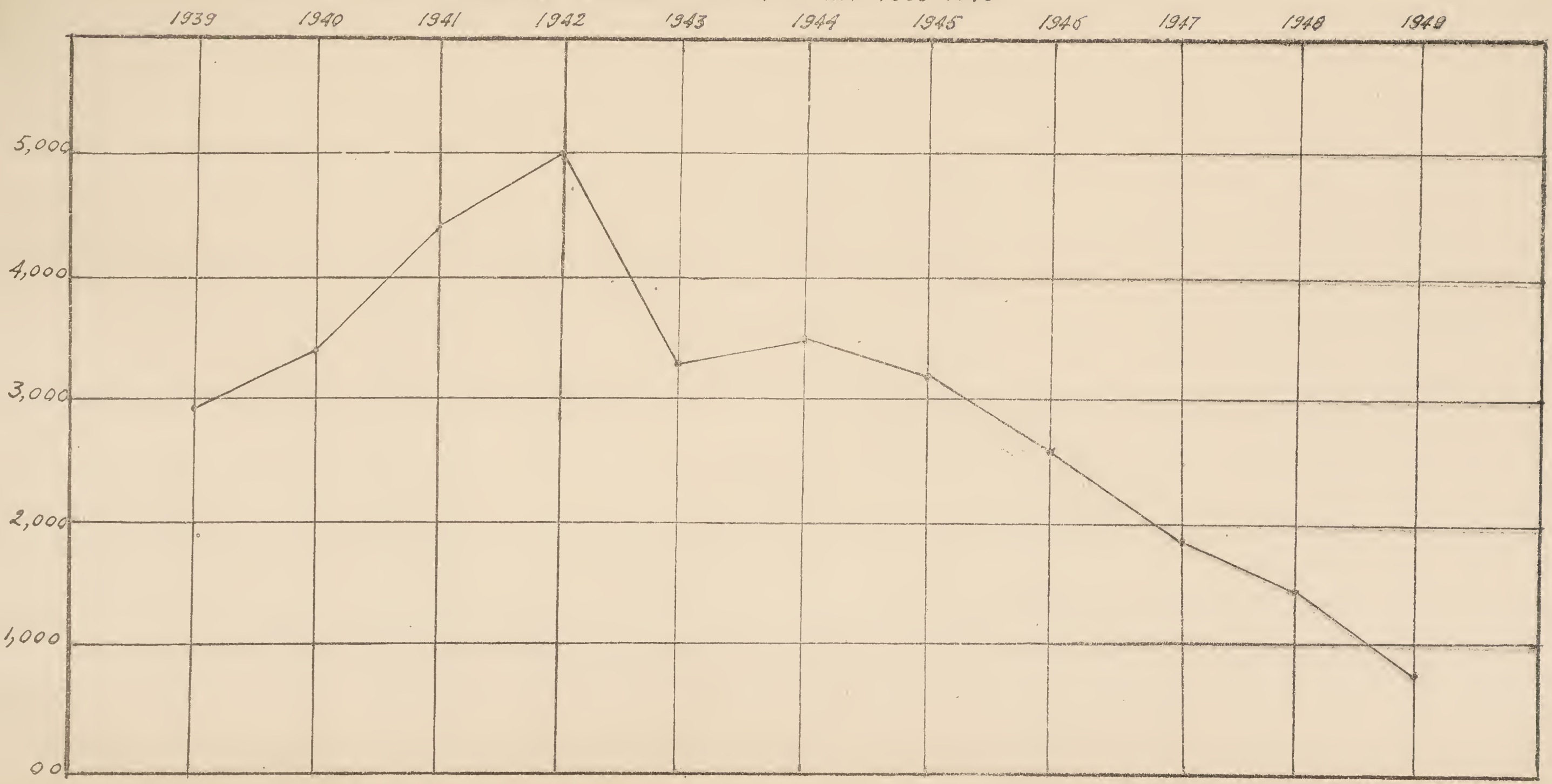
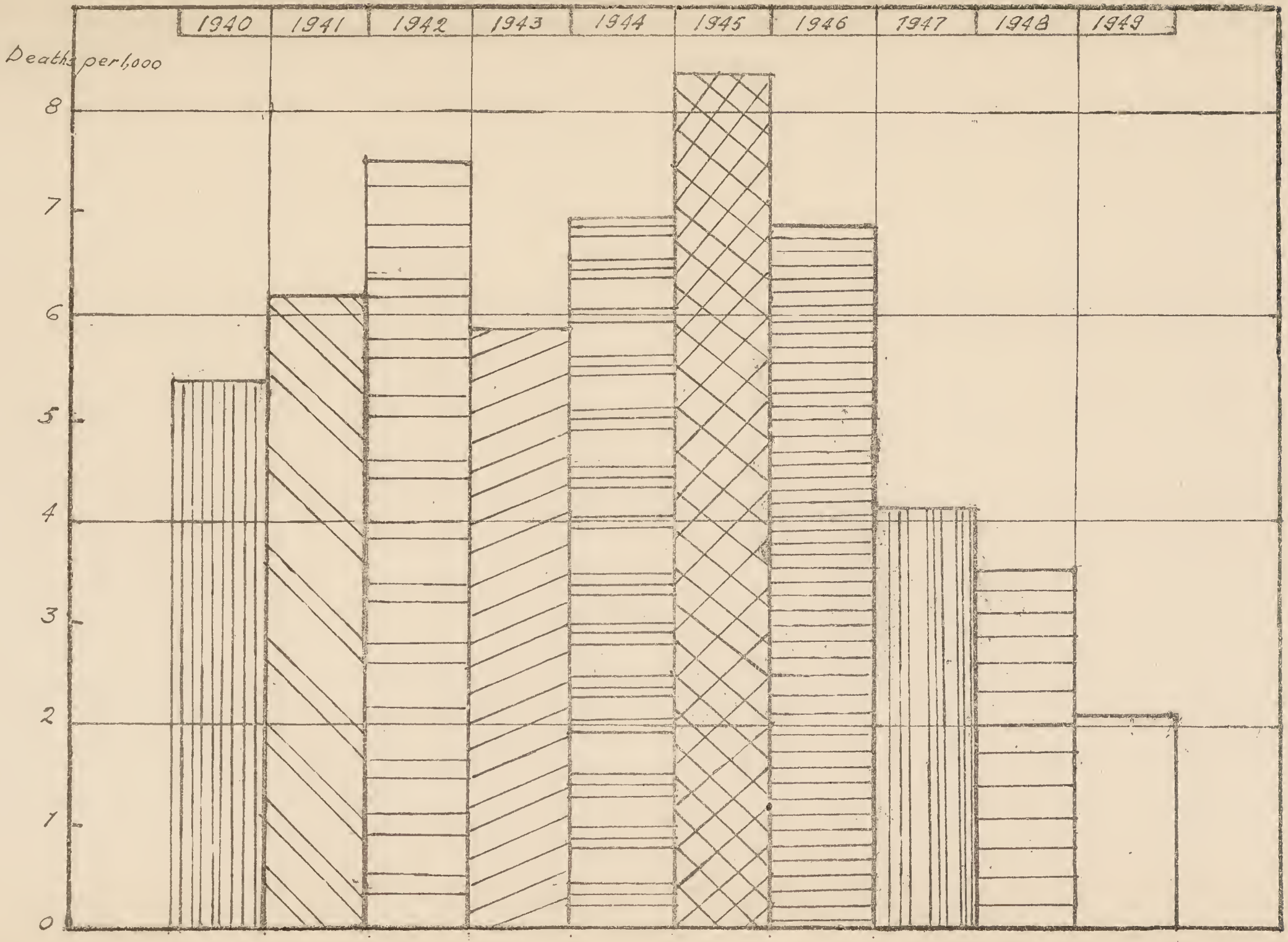


FIGURE 1.

DEATHS ATTRIBUTED TO MALARIA PER 1000 OF THE POPULATION 1940-1949



land, previously derelict, is now valued at Rs. 2,000 per acre and the cost of reclaiming was some Rs. 500 per acre which provides a further example of the economic advantages, apart from malaria reduction, of carefully planned antimalarial works.

All major works undertaken are of a permanent nature and are designed to reduce maintenance to minimum proportions. Earlier works withstood the 1945 cyclones while later ones suffered no appreciable damage from the very heavy rainfalls of the past season.

39. Table VI shows the death rates from malaria by districts per 1,000 of the population for the years 1945–49.

TABLE VI

DEATHS FROM MALARIA PER 1,000 OF THE POPULATION BY DISTRICTS 1945–1949

	*1945**	*1946*	*1947*	*1948*	*1949*
Port Louis	1·18	1·19	0·68	0·96	0·84
Pamplemousses ...	18·45	14·05	6·90	5·31	3·12
Rivière du Rempart ...	9·52	6·93	4·66	4·84	2·63
Flacq	13·92	13·81	5·26	9·13	5·17
Grand Port	15·18	11·11	5·89	4·15	2·53
Savanne	7·46	7·86	3·45	3·29	2·10
Plaines Wilhems ...	3·24	2·71	2·13	1·15	0·52
Moka	6·61	4·57	2·67	2·11	1·06
Black River	22·92	17·57	9·84	12·16	9·49
WHOLE COLONY† ...	8·34	6·88	4·12	3·58	2·11

Graph D demonstrates the reduction in hospital admissions due to malaria in recent years while figure I shows malaria mortality rates per 1,000 of the population during the past ten years.

40. The Malaria Advisory Board met on 4 occasions. Members paid visits to work in progress during the year.

41. *Filariasis.*—89 cases were treated in hospitals and 166 in dispensaries.

42. *Plague.*—No case occurred.

43. *Smallpox.*—No case occurred.

Successful Vaccinations on first attendance ...	10,804	
,, on second and subsequent attendances	499	
		11,303
Unsuccessful vaccinations		85
Not observed		38
TOTAL ...		11,426

55·81 per cent of children born were vaccinated by public vaccinators. This figure does not include infants vaccinated by private medical practitioners.

*Year of severe cyclones.

†The average rate during the preceding five years (1940–1944) was 6·37 per 1,000 of the population.

44. *Enteric Fever.*—316 cases with 53 deaths were notified as compared with 371 with 86 deaths in 1948, the case mortality rate being 16·7 as compared with 23·1 per cent the previous year. The incidence of this disease per 1,000 of the population for the past five years was:—

Year	*Number of cases notified*	*Rate per 1,000 of the population*
1945	315	0·74
1946	627	1·48
1947	405	0·93
1948	371	0·83
1949	316	0·71

45. *Diphtheria.*—There were 154 cases with 22 deaths. The disease occurs sporadically.

46. *Erysipelas.*—There were 19 cases with 1 death.

47. *Tuberculosis.*—Unfortunately owing to lack of personnel it has not yet been possible to institute a survey of this disease but the partial introduction of medical certification of death and the inclusion of tuberculosis in the list of notifiable infectious diseases have provided a certain amount of information.

In 1948, 269 deaths were attributed to tuberculosis—two of the intestines and peritoneum, one of other organs and 266 of the respiratory system. In 1949 there were 301 deaths—respiratory system 290, meninges and central nervous system 3, intestines and peritoneum 7, vertebral column 1.

Compulsory notification of tuberculosis became operative on 1st September, 1949, and 487 cases were notified during the last four months of the year.

The following table gives the average deaths per 10,000 of the population from tuberculosis of the respiratory system in five-yearly periods from 1928 to 1947 and also for 1948 and 1949.

Years	*Death per 10,000 of the Population*
1928–32 ...	12·58
1933–37 ...	8·80
1938–42 ...	6·44
1943–47 ...	5·06
1948 ...	6·02
1949 ...	6·54

It is of interest to note that tuberculosis ceased to be a notifiable disease from December 1932 to August 1949 and that medical certification of death became partially compulsory in 1949.

The Bacillus Calmette Guerin (B.C.G.) is a bovine strain of the tubercule bacillus the virulence of which has been so attenuated that, while being incapable of producing pathological lesions in the human being, it can confer a degree of partial immunity against subsequent infection by virulent tubercule bacilli. Recently a freeze dried vaccine has been produced which may be used up to four months from the date of preparation. This affords the possibility, until now non-existent, of introducing this method of control of tuberculosis to Mauritius and this being closely examined.

48. *Leprosy*.—Four cases were admitted for the first time to the Leper Hospital, two from Mauritius and two from Rodriguez. Two old cases, one from Mauritius and the other from Rodriguez, were readmitted and two were discharged of whom one has since died.

	Male	*Female*
Number of patients in hospital on 1st January	33	13
Admissions	4	2
Discharged	1	1
Death	1	—
Remaining on 31st December 1949 ...	35*	14

The medical Superintendent reports as follows on these patients.

The 46 patients remaining in hospital on 31st December may be classified as under:—

	Male	*Female*	*Total*
Advanced neural	10(2)	3(2)	13
Moderate neural	3	1	4
Mild neural	3	1	4

The figures in brackets represent former lepromatous cases who after becoming bacteriologically negative have exhibited neural signs:—

	Male	*Female*	*Total*
Advanced lepromatous	7	2	9
Moderate	5	1	6
Mild	3	6	9
Cure but blind	1	—	1

Of the cases listed as lepromatous, five show neural changes, moderate in two and advanced in three. The average duration of the disease in these five cases is over 20 years.

The change over from lepromatous to neural or vice versa is now infrequent with appropriate treatment nor is healing of lepromatous lesions accompanied by a switch to neural signs.

49. *Venereal diseases*.—391 cases of admission for syphilis and 6 deaths were recorded from the hospitals during the year. 99 cases of gonococcal infection were treated.

50. *Ankylostomiasis*.—398 cases were treated in hospitals and 10,011 in the dispensaries, and the number of deaths in hospitals ascribed to this disease was 2.

51. *Schistosomiasis*.—83 cases were treated in the hospitals during the year and 361 at the dispensaries.

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*3 Patients on leave.

Nutrition and Nutritional Diseases

52. The report of the Nutrition Officer is published as Appendix III.

The following is a summary of the work done.

(i) *Village Health Workers.*—The training course for Village Health Workers was completed in July 1949. These workers did a short period of survey work, and were then established in different areas, attached to existing Social Welfare Centres. They are the first people to do work of this nature in Mauritius, and they appear to be fulfilling a genuine need in rural areas.

(ii) *Camp Diable Crèche or Day-Nursery.*—The members of Camp Diable Village Council suggested to have a Crèche or Day-Nursery in Camp Diable to the Civil Commissioner South. Arrangements are being made to establish the Crèche as soon as possible.

(iii) *School meals.*—The experimental stage of the School Meals Service came to an end in December 1948, and plans are now prepared for supplying some food to all primary schoolchildren in the island.

Finance is a limiting factor in any scheme covering all schools, but it is hoped to give at least a milk drink to them all, probably beginning in 1950.

(iv) *Institutions.*—Advice and help have been given in institutions, and food yeast tablets are now supplied to the Prisons, where an increased diet scale has been in force during the year.

The feeding arrangements at the Cannoniers' Point Schools' Camp were very successful. A well balanced and varied diet was given and was much appreciated by both staff and pupils.

(v) *Survey work.*—A large scale questionnaire survey was started, and interesting information is coming in from schools in different areas. Some surveys were carried out on a sugar estate camp, and in town areas in addition to the schools.

(vi) *Food trials—(a) Yams.*—Experiments have been carried out as to the preparation, cooking and palatability of yams.

(b) Food yeast.—Trials are being made as to the possibilities of incorporating food yeast in bread for the Prisons.

(vii) *Lecture courses.*—These were given in the Teachers' Training College to Cadet Sanitary Inspectors and to mothers in one of the Social Welfare Centres.

(viii) *Inter-Departmental Nutrition Committee.*—This Committee met to consider the recommendation of committee No. 11 of the Mauritius Economic Commission.

53. The following nutritional diseases were recorded during the year:—

Cases treated	*In hospitals*	*At dispensaries*
Beriberi	7	1
Pellagra	48	77
Scurvy	2	1
Active rickets	3	8
Other avitaminoses and nutritional efficiency states	407	3,540

Food and Drugs in Relation to Health and Diseases

54. There are six public and three private abattoirs in the Colony. The public abattoirs administered by the Municipality of Port Louis, the Board of Beau Bassin—Rose Hill, and Curepipe, are each controlled by a veterinary officer. The other abattoirs are conducted under the supervision of the sanitary staff. The equipment for a new abattoir in Flacq District has now arrived. It may be said that on the whole the foodstuffs marketed are wholesome and of good quality. The only condition found with any frequency in the meat trade is tuberculosis. Cestode infection is uncommon among cattle, and it is very rare in human beings.

Adulteration of milk is a very common offence in spite of sanctions, fines and even imprisonment. In 1949 there were 491 successful prosecutions. Fines imposed amounted to Rs. 15,245·25 and terms of imprisonment reached the total of 66 months, 9 weeks and 60 days with and without hard labour.

Maternity and Child Welfare

55. This service is carried out mainly by the Maternity and Child Welfare Society and, in Port Louis by *La Société Pasteur de la Goutte de Lait* administered by the Municipality. The former has 10 centres situated at Curepipe, Rose Hill, Beau Bassin, Vacoas, Henrietta, Quatre Bornes, Centre de Flacq, Rose Belle, Rivière des Anguilles and Mahebourg. The Government grant in 1948–49 was Rs. 41,000 and Government provides the part-time services of a Superintendent of Midwives and for the training of midwives for the Society. The Society employs 25 midwives. The following is a brief summary of the work done:—

Confinements	2,322
Total attendances at Ante and Post natal clinics	2,253
Total attendances of infants for weighing and supervision ...	15,572
Visits to infants	3,727
Average number of infants receiving milk daily	801

Six qualified midwives are employed by Government, one of whom was detailed for duty in Rodriguez. They made 3.128 visits and attended 641 confinements.

The antenatal clinic at the Civil Hospital in Port Louis, which was established in 1947 became increasingly popular, the average weekly attendance for the year being 79 as compared with 51 for the previous year. The number of expectant mothers registered was 1,127 and the total number of attendances in 1949 was 4,132. In addition to routine advice and treatment, women attending this clinic receive dental treatment at the Port Louis dental clinic.

The number of expectant mothers registered at Centre de Flacq, Long Mountain and Camp Fouquereaux, antenatal clinics, was 288, and the total number of attendances was 539.

56. The revised syllabus for training of midwives came into force in 1949. There are 10 students in training at Civil Hospital.

School Medical Service

57. The departure of the Schools Medical Officer from the Colony has unfortunately interrupted this service. There is provision in the estimates for two medical officers for this work but candidates are not yet forthcoming.

58. The dental service in Port Louis provides for school children as well as for pre-school children, expectant mothers, hospital cases and police.

In the course of 497 sessions treatment was given to 12,602 patients, the attendances being as follows:—

Pre-School children	976
School children	8,420
Expectant and nursing mothers	1,501
Hospital cases In-patients	429
Hospital cases Out-patients	607
Police Force	669

The treatment administered was:—

Fillings in permanent teeth	6,571
Permanent teeth extracted	2,053
Deciduous	3,380
Treatment of parodontal disease	1,204
Tumours of the jaw	5
Osteomyelitis of the jaw	60
Luetic cases	10
Fractures of the jaw	8
Other surgical operations of the jaw	10

Port Health Work and Administration

59. The following table summarises the work done by the Port Sanitary Authority:—

Vessels arriving	210
Crews examined	11,795
Vessels given pratique on arrival	102
Vessels given pratique after disinfection of the linen and effects of the passengers, crew, fumigation add disinfection of the forecastle	73
Vessels given pratique after disinfection of linen etc., and claytonization of cargo	54
Vessels arriving from infected ports	140
Vessels detained for purposes of disinfection and fumigation on account of plague, cholera or small pox	1

1,182 passengers, coming by surface route from infected areas, were put under surveillance.

218 civil aircraft arrived in the Colony with 3,257 passengers. 642 of these passengers, coming from infected areas, were put under surveillance.

60. Statements showing the number of rodents caught and found dead in Port Louis during the year 1949:—

Rats	19,587
Mice	3,134
Musk rats ...	223
Total ...	22,944

Number of rodents microscopically examined:—

Rats	... ...	19,387
Mice	... ...	3,130
TOTAL	...	22,517

Species of rats

Rattus Rattus Alexandrinus	...	17,286
Rattus Rattus Rattus	... ...	62
Rattus Rattus Frugivorus	...	364
Rattus Rattus Norvegicus	...	1,875
TOTAL	...	19,587

Number of rodents found plague-infected	...			—
Number of gravid females	...	...	...	431
Number of young ones	...	...	...	1,553
Number of rats found dead	...	...	...	322

GENERAL MEASURES OF SANITATION

61. *Port Louis.*—The medical officer of health reports as follows:—

Administration

The district of Port Louis is for purposes of sanitation divided into six sections, each of which is under the supervision of a sanitary inspector. There are also eight labourers, departmentally styled "Disinfectors" who are actually doing duty as such.

The staff of the Harbour Disinfecting Station comprises: one officer in charge, a Mechanic, two stokers, one deckhand, one boatman, one messenger and two night guardians.

The rat-catching branch is composed of a Technical Assistant, two dissectors of rats and twenty rat-catchers.

The whole sanitary work is under the supervision of a senior sanitary inspector.

Communicable diseases

Diseases	*Cases notified*		*Deaths*	
	1948	*1949*	*1948*	*1949*
Tuberculosis (all forms) notifiable as from 1.9.1949	—	144	—	—
Enteric or typhoid fever	89	31	22	6
Diphtheria	45	28	10	2
Erysipelas	1	1	—	—
Puerperal fever	—	1	—	1
Acute Poliomyelitis	54	25	3	—

Disinfection

The Harbour Disinfecting Station which is responsible for the disinfection of soiled articles all over the island is situated at Quay D. The Plant can cope with the disinfection by means of steam under pressure of bulky articles such as mattresses, pillows, etc.

Attached to the station is a Claytonizer barge used mainly for the fumigation prior to landing, of cargoes coming from infected ports where plague is endemic. It is also used for the periodical fumigation of the Granary Stores where beans, rice, or other commodities are stored.

Housing

This is indeed a major problem and one deserving of special attention at the earliest possible moment. The second World War and the 1945 cyclones are the two main factors which can be held responsible for the insanitary conditions of a fairly high percentage of dwelling houses which are either in a state of decrepitude or are undersized or both, with resulting promiscuity and overcrowding.

The insanitary condition of a large number of buildings is a grave danger to health ; but until normal conditions are restored and the present scarcity and high cost of building materials remedied, drastic action leading to condemnation of houses will cause undue hardship without providing a remedy to the present unsatisfactory state of affairs.

Food

Premises in which food is stored or prepared are subjected to constant and periodical inspections ; but the unhygienic habits of the personnel employed in those premises are a standing menace to health.

The compulsory medical examination of all persons employed in the handling or preparation of food intended for sale to and consumption by human beings, reduces to a certain extent the danger of the spread of communicable diseases. Much can be done by the sanitary staff by persuasion to render those who handle food intended for sale, hygiene conscious. Constant efforts are being made to reduce the risk of fly or air-borne diseases and hawkers of cakes and cooked food are compelled to keep their food in clean cases or boxes protected from flies and dust.

The main sources of water supply for Port Louis are Mare-aux-Vacoas and Pailles reservoirs and the water obtained from these sources is filtered and chlorinated.

There is in the town of Port Louis a cold storage establishment which is mainly used for the storage of imported meat-beef, mutton, pork, poultry, rabbit, etc., a rat-proof Granary for the storage of grains, etc., and there exists also quite a large number of shops and foodstores. The shops are disseminated in the town, whereas the foodstores commonly known as " Godowns " are confined to the central part, where the shortage of space leads to overcrowding and consequently to lack of cleanliness.

There are in Port Louis 13 Wine Factories, 5 aerated Water Factories, 16 bakeries, 17 pasteries and about 30 restaurants and refreshment rooms. As a general rule, the prevailing conditions in the factories and eating houses are unsatisfactory. In spite of all these adverse factors, the figures for communicable diseases for 1949 as compared with those for 1948, may well afford an indication of the progress made in food control, handling and distribution.

Wines or country liquor are manufactured mainly from imported dried raisins, and on a small scale from local fruits such as guavas, prunes, bananas, etc.

Milk

A very small quantity of cows' milk is produced in the district itself, and the town consumers have to rely for their supply on milk from other districts, mainly those of the North. The milk is brought to town in unlocked cans by trains, buses, lorries and lastly on bicycles by the hawkers themselves. Even then the supply is inadequate and the use of condensed and powdered milk has to be resorted to, Civil Hospital for example makes use of about 47,000 tins of condensed milk a year for the patients. The number of hawkers is estimated to be about 500.

Although food distribution and production in all its details have received the attention of the sanitary personnel, it is on milk that attention has been mainly focused, for it has for years been realised that the quality of the milk supply in Port Louis has been most unsatisfactory. The practice of adulterating milk by the addition of water or other substances is showing some sign of decrease, and the following figures are suggestive:—

	1948	*1949*
No. of samples taken ...	86	72
No. of convicted cases ...	74	51 (16 cases are pending)
Total amount of fines ...	Rs. 4,580	Rs. 1,925
Imprisonment	67½ months	37months

The samples secured represent about 6 per cent of those examined.

Meat

There are two slaughter houses: one at Roche Bois on the out-skirt of the town and under Municipal ownership and control, and the other at La Paix Street in the Centre of the town. The latter, a private abbattoir, is used exclusively for the slaughtering of goats and sheep.

After slaughtering, the carcases are examined by a veterinary surgeon appointed by the Municipal Corporation. The meat found fit for human consumption is branded and sent to the three municipal markets.

The conveyance of meat from the slaughter houses to the markets is done by a lorry especially constructed for the purpose.

The following figures show the number of animals slaughtered, examined and condemned during the year under review:—

	No. of animals slaughtered	*No. of carcases*	
		Examined	*Condemned*
Madagascar bullock ...	1,051	1,051	29
Rodrigues bullock ...	236	236	—
Local bullock	534	534	—
Cows (milch breed) ...	631	631	—
Cows (herd)	191	191	—
Heifers (milch breed) ...	18	18	—
Heifers (herd)	11	11	—
Calves	1,232	1,232	—
Goats	12,599	12,599	—
Sheep	1,528	1,528	—
Pigs	4,318	4,318	—

Cleansing

The scavenging in the Intra Urban Area is conducted by the Municipality and the work entrusted to the "Gardens Superintendent." Through want of funds, apparently, both the number of vehicles used for the removal of refuse—(two Bantam carriers and five lorries) and the labour provided in connection therewith, are inadequate: the work is consequently not being done as it should be and the result is that heaps of refuse are deposited either on the footpaths or in the street gutters this in spite of the enactments of G.N. 45 of 1949 in virtue of which owners and/or occupiers of premises are bound to provide receptacles for the disposal of their house or trade refuse. A complete lack of co-operation and understanding on the part of the public tends to make the scavenging service a partial failure.

The scavenging and the Night Soil Services in the Extra Urban Area are entrusted to a Government Contractor, and the Weeding is done periodically by the Public Works Department.

The refuse is dumped at Plaine Lauzun and Roche Bois.

About 70 per cent of the premises in Port Louis are provided with a water-carriage system, 25 per cent with pit latrines and the rest with pail latrines. The tubs are removed three times a week. Night soil lorries especially constructed for the purpose are used for the removal of the pails and the sewage is disposed of at the two Tipping Plants—one at Paul and Virginie Street and the other at Cassis near the Western Cemetery.

The sewerage system is under the control of the Public Works Department.

The number of public latrines is inadequate and it not infrequently happens that a disused A.R.P. shelter functions as a public latrine.

A summary of the work done by the sanitary staff of Port Louis is given in Table VII.

TABLE VII

Summary of Sanitary Work in Port Louis District—during the Year 1949

A. INSPECTIONS OF PREMISES

Visits to	*Notices (Ord. 47/1925)*				*Orders (Ord. 28/1946)*			*Requests*		
	No.	*No. served*	*No. complied with*	*No. not complied with*	*No. served*	*No. complied with*	*No. not complied with*	*No. served*	*No. complied with*	*No. not complied with*
Bakeries and Pasteries	117	26	26	—	8	8	—	—	—	—
Cemeteries and Cremation grounds...	43	—	—	—	—	—	—	—	—	—
Dairies	6	—	—	—	—	—	—	—	—	—
Factories :										
(*a*) Wine	76	13	6	7	4	3	1	—	—	—
(*b*) Aerated Waters	27	—	—	—	—	—	—	—	—	—
(*c*) Others	38	3	3	—	—	—	—	2	2	—
Hotels and Restaurents	396	48	41	7	23	22	1	—	—	—
Markets	120	—	—	—	—	—	—	—	—	—
Private Premises	7,414	753	639	114	149	138	11	121	77	44
Shops and Stores	551	146	73	73	10	8	2	—	—	—
Schools	47	—	—	—	—	—	—	—	—	—
Slaughter Houses	30	—	—	—	—	—	—	—	—	—
Stables and Cowsheds	86	5	5	—	4	4	—	—	—	—
Ships	48	—	—	—	—	—	—	—	—	—
TOTAL	8,999	994	793	201	198	183	15	123	79	44

B. SANITARY CONTRAVENTIONS

PROSECUTIONS

Breach of G.N. 42/34 (Milk)	*Breach of Ord. 47/25 (Nuisances)*	*Breach of Ord. 28/46 (Malaria)*	*Breach of G.N. 320/1920 (Cakes)*	*Breach of G.N. 183/26 (Latrines)*	*Breach of G.N. 164/27 (Med. Certificate)*	*Fines* Rs. c.	*Imprisonment*
134	—	—	—	—	—	2,823 00	53¾ months
—	53	—	—	—	—	365 00	—
—	—	1	—	—	—	50 00	—
—	—	—	96	—	—	1,190 00	—
—	—	—	—	14	—	80 00	—
—	—	—	—	—	8	29 00	—
					TOTAL ...	4,537 00	53¾ months

TABLE II—*continued*

C. CONTAGIOUS DISEASES

Diseases	*No. of cases notified in Port Louis*	*No. of Deaths*	*No. of Disinfections*
Typhoid Fever or Enteric Fever	31	6	31
Diphtheria	28	2	28
Puerperal fever...	1	1	1
Erysipelas	1	—	1
Cerebro-Spinal-Meningitis ...	Nil	—	—
A. Poliomyelitis	25	—	25
Tuberculosis	251	—	—

D. RODENTS

	Rattus	*Mice*	*Musks*
No. caught...	19,587	3,134	223
No. examined for plague ...	19,387	3,130	220
No. found infected	—	—	—
No. of immature or putrid rats not examined...	200	4	3

E. FOODSTUFFS

No. of examinations	1,130
No. of seizure	58
No. of milk samples taken	72

F. BUILDINGS

No. of applications received	306
No. of applications rejected	7
No. of applications approved...	299

G. CREMATIONS

No. of cremations attended to	35

62. The project of a sewerage scheme for the townships of Plaines Wilhems has now received approval in principle of the legislature and negotiations are in progress with a view to proceeding with the scheme.

63. In rural areas continued progress is being achieved and while no dramatic improvement has been attained appearances are changing for the better. The deaths from diseases of the alimentary tract including dysentery, diarrhoea, enteritis, ankylostomiasis and typhoid fever continue to decrease steadily in number.

Year	*deaths per 1,000 of the population*
1944	3·50
1945	6·48
1946	5·26
1947	2·43
1948	2·41
1949	2·20

64. *Training of Sanitary Personnel.*—5 sanitary cadets enlisted at the end of calendar year 1948 were still on training at the close of the period under review.

65. *Water Supplies.*—The progress made in 1949 has been as follows:—

Mare-aux-Vacoas system

(a) No extensive new works have been carried out but delivery of pipes for new trunks began in 1949. Two new filters for 800,000 gallons per day were started at the Filtering Station of La Marie ; one mile of trunk main for Moka, two miles of distributary main for the lower part of Beau Bassin and approximately 5 miles of small service mains were laid in the town of Plaines Wilhems.

District Water Supplies

(b) Preliminary work on the new Storage Reservoir at Piton du Milieu which will supply the districts of the North, Flacq and lower Grand Port and Savanne was started in July.

In the North the 300,000 gallons service reservoir at Goodlands and one of 150,000 gallons at Plaine des Papayes have been completed and 7 miles of 8″ 6″ and 5″ trunk mains to these reservoirs were laid. Also approximately 3 miles of a 3″ service main along the coast road Grand Bay to Cap Malheureux were completed. In Flacq a new 6″ service main was laid along 3 miles of Rivière Sèche road and was completed in July. Extensive cleaning and re-laying of existing main was carried out resulting in marked improvements in the supply of the district.

PRISONS

66. Prison hygiene was maintained at a high level

Dependency of Rodrigues

67. The Report of the medical officer Rodriguez is annexed. (Appendix IV).

ACKNOWLEDGEMENT

My thanks are due to individual officers of the department for their kind and active co-operation and assistance throughout the year.

A. Rankine,
Director of Medical Services

16th August, 1950.

Appendix I

Report of the Bacteriological Laboratory for the year 1949

STAFF

Senior Pathologist	:	H. D. Tonking, M.R.C.S. (England), L.R.C.P. (London).
Pathologist	:	A. Ng Chhung Hin, M.B., B.Ch., B.A.O. (N.U.I.) D.C.P. (London), D.T.M. and H. (England).
Government Chemist	:	W. Diaper, B.Sc. Tech. (Manc.), A.M.C.T.
Medical Entomologist	:	S. Gébert.
Assistant Government Chemist	:	R. Avice du Buisson, R.A.C. (Mauritius).
Senior Laboratory Assistant (Pathology)	:	L. Webb.
Junior Laboratory Assistant (Pathology)	:	J. E. Hervel.
,,	:	K. Topsy.
,,	:	Mrs. R. Giraud.
,,	:	Miss A. de Gersigny.
,,	:	Miss L. Webb.
Laboratory Assistant	:	L. Arouff.
,,	:	Miss M. Fleuriot.
,,	:	Miss M. d'Agnel.
,,	:	F. Louise.
,,	:	Miss Guillot.
Clerk	:	L. F. Legrigore.

Mr. R. Rivalland, Scientific Assistant from the Department of Agriculture was appointed Acting Government Chemist on 19th January, 1949. On 28th February, 1949 we lost the services of Miss d'Agnel, a temporary laboratory Assistant, owing to the abolition of her post.

On 1st June, 1949, Mr. W. Diaper was appointed Government Chemist taking over the duties from Mr. R. Rivalland who returned to the Department of Agriculture.

Mrs. R. Giraud who was away on overseas leave resigned on 15th September, 1949, and on the same date Mr. L. Arouff, laboratory assistant, also resigned. As a result of these two vacancies Mr. F. Louise and Miss L. Guillot were appointed temporary laboratory assistant.

Dr. H. D. Tonking, Senior Pathologist, obtained a transfer to Nigeria and left the Colony on 17th October, 1949, his duties were taken over by Dr. A. Ng Chhung Hin, the Pathologist.

Mr. J. E. Hervel who continued to replace the Assistant Government Chemist proceeded on overseas leave in December, 1949, and the duties were taken over by Mr. R. Rivalland, Scientific Assistant from the Department of Agriculture.

I wish to thank the Director of Agriculture who so kindly helped us in allowing Mr. R. Rivalland to assume the duties of the Acting Government Chemist, and afterwards that of Acting Assistant Government Chemist.

The branch laboratory at Victoria Hospital had to be temporarily closed from the 9th November, 1949, owing to the illness of one assistant. We hope to re-open early next year.

In March 1949, Mr. S. Gébert, the Entomologist of the Medical and Health Department took over the duties of the Entomologist of the Malaria Eradication Scheme.

The number of examinations done at the Central Laboratory continued to show an increase, but those at the Civil Hospital Branch and the Victoria Hospital Branch both showed a drop due to the temporary closing of the latter and the shortage of staff at Civil Hospital. However, the total number of examinations done at the Central Laboratory and its branches showed an increase over the previous year. (41,396 in 1948 excluding the 6,431 for the D.D.T. experiment and 43,498 in 1949).

RESEARCH

Male Toad Pregnancy Test.—Owing to the difficulty of obtaining suitable female rabbits for the Friedman's test and the favourable reports obtained by workers in various parts of the world on the Male Toad Test, we decided to try it out on our local toad *B. regularis*. The work was carried out at the Central Laboratory by Dr. A. Ng Chhung Hin and Mr. Webb on 390 toads. The results which were published in the Lancet of 17th September, 1949, were very satisfactory and the test is now being used as a routine in the laboratory.

LABORATORY RECEIPT IN THE FORM OF FEES

The total earnings for the year amounted to Rs. 15,855.32.

ROUTINE EXAMINATIONS

A total of 24,819 exclusive of those made by the Chemical Division which carried out 4,480 examinations (Appendix I) and of the Branch Laboratories (Appendices II and III).

The work of the Laboratory is divided up into the following sections:—

I. Medical Biology.
II. Pathology.
III. Bacteriology.
IV. Haematology.
V. Serology.
VI. Laboratory Products.

I. MEDICAL BIOLOGY

A. 5,418 Simple Routine Examinations were made

(a) *Blood (Microscopical)*

Films for malaria:	
Plasmodium malariae	7
Plasmodium vivax	25
Plasmodium falciparum	25
Undetermined rings	9
No parasites found	581
Films for microfilariae:	
Wuchereria bancrofti	27
No microfilariae	50
Total	722

(b) *Faeces (Microscopical)*

Total number examined	2,986
Helminths:	
Bertiella studeri	2
Strongylus equinus	1
Taenia saginata	2
Trichuris ova	1,086
Ascaris ova	362
"Hookworm" ova	1,209
Strongyloides larvae	108
Trichostrongyle ova	36
Heterodera marioni ova	10
Enterobius vermicularis ova	10
Nematodirus ova	1
Protozoa:	
Entamoeba histolytica	94
Entamoebae coli	165
Vegetative and precystic entamoebae	98
Endolimax nana	151
Dientamoeba fragilis	2
Giardia intestinalis	92
Chilomastix mesnili	39
Trichomonas intestinalis	56
Blastocystis hominis	579
No helminths or protozoa	801

(c) *Urine (Microscopical)*

Total number examined	1,577
Hyaline casts	279
Granular casts	162
Waxy casts	19
Leucocytic casts	73
Red cells casts	1
Schistosoma haenatobium	104
Trichomonas vaginalis	21
Cellular casts	

(d) *Cerebro-spinal Fluid*

Total number examined	116
Leucocyte counts	56
Differential leucocyte counts	41
Nonne Apelt globulin tests	7

(e) *Pus, Discharges, and Scrapings, etc. (Microscopical)*

Total number examined	15
Treponema pallidum	1
Trichonomas vaginalis	1
Fungus	4
Differential count	1

(f) *Miscellaneous (Microscopical)*

Total number examined	1
Emeria stiedae (rabbit)	1

(g) *Entomology*

Chironomid	1

II. PATHOLOGY

Morbid histological examinations were made on 131 specimens of material.

HEAD AND NECK:	
Brain : Normal	1
Eye (droit) *:* Round celled sarcoma	1
Jaw : Epithelioma	1
Lip : Hyperplasia of epithelium	1
Epithelioma	1
Gum : Chronic inflammation	1
Hypertrophy	2
Epithelioma	1
Neck : Eeticulo-sarcoma	1
Thyroid : Toxic adenoma	1
Colloid goitre	1
Larynx : Squamous celled carcinoma	1
Trachea : Normal	1
THORAX:	
Breast : Adeno-carcinoma	2
Scirchous carcinoma	2
Anaplastic carcinoma	1
Chronic cystic mastitis	3
Acute mastitis	1
Fibro-adenoma	1
Nipples : Epithelioma	1
Lungs : Pneumonia	2
Heart : Normal	1
Aorta : Atheroma	1
ABDOMEN:	
Abdominal wall : Sarcoma	1
Gumma	1
Umbilicus : Carcinoma	1
Suprarenal : Normal	1
Pancreas : Acute pancreatis	1
Spleen : Perisplenitis	1
Stomach : Adenocarcinoma	2
Ulcer	4
Intestine : Chronic enteritis	2
Colon : Colitis	1
Appendix : Chronic appendicitis	1
Bilharzia	1
Rectum : Adenoma	2
Pelvis : Haemangioma	1
UPPER LIMB:	
Arm : Fibroma	1
Elbow : Fibrosarcoma	1
Round celled sarcoma	1
Shoulder : Round celled sarcoma	1

Lower Limb:		
Foot (sole) :	Melanoma	1
	Corn	1
	Elephantiasis	3
Calf :	Electric current injury	1
Skin :	Fibroma	2
	Epithelioma	1
	Hacmatoma	1
	Haemangioma	1
Bone :	Osteomyelitis	1
	Osteoma	1
Joints:		
Knee :	Chronic inflammation	1
	granuloma	1
Ankle :	Chronic inflammation (due to foreign body)	1
Wrist :	Chronic inflammation	1
Tarsal joints :	Chronic inflammation	1
Genito-Urinary System:		
Kidney :	Papillary carcinoma	2
	Chronic interstitial nephritis	2
	Pyonephrosis (tubercular)	1
	Normal	3
Bladder :	Cystitis	1
	Carcinoma	2
	Papilloma	1
Ovary :	Papillary cystadenoma	2
	Follicular cyst	1
Cervix :	Chronic cervitis	1
	Adenocarcinoma	1
	Squamous celled carcinoma	7
	Simple polypus	1
Uterus :	Endometrium—proliferation	2
	Endometrium—normal	2
Vulva :	Epithelioma	3
Prostate :	Hypertrophy	2
Broad Ligament :	Cavernous haemangioma	1
Testes :	Haematocele	1
Penis :	Epithelioma	3
Lymph Gland :	Tuberculosis (1 from region of duodenum)	2
	Chronic adenitis	5
	Lymphadenoma	1
	Lymphosarcoma	1
Blood vessels :	Meriosclerosis	3
Muscles :	Volkman's contracture	2
	Fibromyoma	1
	Rhabdomyoma	1
Tendon :	Chronic inflamation	1
Nerves :	Fibroblastic proliferation	1
Guinea Pig:		
Pituitary :	Normal	1
Cow:		
Pituitary :	Normal	1
Sheep:		
Lymph Gland :	Chronic adenitis	1

III. BACTERIOLOGY

A. 1,441 Microscopical Examinations were made

(a) *Sputum (Microscopical)*

Total number examined	1,151
Mycobacter tuberculosis	189
Pneumococci	1

(b) *Cerebro-spinal Fluid (Microscopical)*

Total number examined	5
Mycobacter. tuberculosis	1
Pneumococci	1

(c) *Throat and Nasal Swabbings (Microscopical)*

Total number examined	70
Corynebact. diphteriae	18
Vincent's fusiform organisms	3

(d) *Pus, Discharges and Scrapings, etc. (Microscopical)*

Total number examined	215
Neisseria gonorrhoeae	30
Mycobacter. tuberculosis	4
Staphylococci	3
Streptococci	2

B. 3,361 Cultural Examinations were made

(a) *Blood*

Total number cultured	58
Bact. typhosum	1
Bact. coli	4
Bact. proteus	1
Bact. alkaligenes	1
Pseudomonas pyocyanea	1
Streptococci	2
Staphylococci	17

(b) *Faeces*

Total number cultured	142
Bact. typhosum	8

(c) *Urine*

Total number cultured	506
Bact. coli	295
Bact. paracolon	1
Bact. proteus	12
Bact. typhosum	1
Streptococci	23
Staphylococci	81
Inoculation to guinea-pig for *mycobacter. tuberculosis*	3
Friedman's test for pregnancy	5
Male toad test (Galli-Mainini) for pregnancy	238

(d) *Sputum*

Total number cultured	8
Streptococci	3

(e) *Cerebro-spinal Fluid*

Total number cultured	47
Bact. coli	2
Bact. alkaligenes	1
Pneumococci	6
Staphylococci	4
Inoculation to guinea-pig for *mycobacter. tuberculosis*	1

(f) *Throat and Nasal Swabbings*

Total number cultured	1,833
Corynebact. diphtheriae	336
Pseudomones pyocyanus	2
Diphteroids	1
Pneumococci	1
Streptococci	1
Staphylococci	62
Virulence test for *corynebact. diphtheriae*	17

(g) *Pus, Discharges and Scrapings etc.*

Total number cultured	521
Corynebact. diphtheria	11
Bact. typhosum	1
Bact. alkaligenes	1
Bact. proteus	4
Pneumococci	2
Pseudomonas pyocyanea	9
Streptococci	26
Staphylococci	248
Haemophilus influenza (Pfieffer)	1
Inoculation to guinea-pig for *mycobacter tuberculosis*	1

C. Autogenous vaccines were prepared from the following organisms isolated, among others, from various samples, 64 in all

(a) *Faeces*

Bact. coli	1

(b) *Urine*

Bact. Coli	4
Staphylococci	1

(c) *Spatum*

Streptococci	2
Staphylococci	1

(d) *Throat and Nasal Swabbings, etc.*

Staphylococci	4
Streptococci	3

(e) *Pus, Discharges, and Scrapings, etc.*

Staphylococci	48

D. Agglutination Tests

Significant agglutinins for Bact. typhosum "H" antigen	442
Significant agglutinins for Bact. typhosum "O" antigen	326
Significant agglutinins for Proteus OX 19	5
Significant agglutinins for Proteus OX K	2
Significant agglutinins for Proteus OX 2	1
Significant agglutinins for Brucella abortus	76
Total number submitted for agglutination tests	1,061

E. Water analysis:
Number of samples examined ... 328

F. Septic Tank
Number of samples examined ... 3

IV. HAEMATOLOGY

Routine Blood Examinations

Total number examined	1,772
Full counts of red and white cells and haemoglobin determinations	747
Differential leucocyte counts	707
Blood picture	2
Blood typing	259
Clotting and bleeding times	8
Sedimentation rate	47
Blood platelets	2

V. SEROLOGY

(a) *Blood*

Kahn test:

Negative	6,636
Doubtful reactions	864
+	924
+ + ...	1,311
+ + + ...	1,016
+ + + + ...	31
Unsuitable for test	416
Total ...	11,198

(b) *Cerebro-spinal Fluid*

Kahn test:

Negative	32
Douftful reactions	2
+	2
+ + ...	2
Unsuitable for test	4
Total ...	42

VI. LABORATORY PRODUCTS

64 autogenous vaccines were prepared during 1949 ; details of which will be found under Bacteriology.

T.A.B. vaccine prophylaxis	19½ litres
T.A.B. vaccine for protein shock	1 litre
Besredka's staphylococcal antivirus	8 litres
Besredka's streptococcal antivirus	2 litres

A strain of *lactobacillus bulgaris* was maintained.

CONCLUSION

I would like to express my thanks to all members of the staff for their whole-hearted support and loyal co-operation throughout the year.

A. Ng Chhung Hin,
Senior Pathologist.

PUBLICATIONS

Webb, Lewis J., Webb, Lilly A.M. (1948). A First Record of *Brucella Abortus* in the cattle of Mauritius ; and Data of the Possible Occurrence Locally of Undulant Fever in Man. Jour. of Hgy. 46, 4, pp. 419–421.

Ng Chhung Hin, A., Webb, J. L. Male-Toad Pregnancy Test. Letter to Editor, The Lancet, Sept. 17, 1949 p. 539.

Annual Report of the Government Chemist for the year 1949

STAFF

Government Chemist	...	W. Diaper, B.Sc. Tech. (Manc.), A.M.C.T.
Assistant Government Chemist		R. Avice du Buisson, R.A.C. (Mauritius).
Acting Assistant Government Chemist		E. Hervel.
Acting Assistant Government Chemist		R. Rivalland, R.A.C. (Mauritius).

This report covers the work of the Government Chemist's Laboratory during the year 1949.

In January 1949, Mr. R. Rivalland, Scientific Assistant in the Chemical Division of the Department of Agriculture replaced the Acting Government Chemist, Mr. R. Avice du Buisson, who was on overseas leave since December 1948.

Mr. W. Diaper was first appointed Government Chemist in June 1949 and Mr. Rivalland reverted to his substantive post at the Department of Agriculture.

Mr. E. Hervel, Junior Laboratory Assistant, who acted as Acting Assistant Government Chemist was granted a study leave and proceeded to the United Kingdom for a refresher course on the 8th of December, 1949 and was replaced by Mr. R. Rivalland, Scientific Assistant of the Department of Agriculture.

The total number of samples and exhibits examined during the year was 4,480 as compared to 3,898 in the previous year and 3,757 during the previous five years.

In this report the work done is divided into the following sections, viz:—

I. Bio-Chemical.
II. Public Health.
III. Customs and Excise.
IV. Forensic.
V. Miscellaneous.

I. Bio-Chemical

Blood (urea and sugar)	... ...	2,001
Urine	... ...	891
Faeces	... ...	3
Urinary calculus	... ...	3
Cerbro-spinal Fluid	... ...	40
Total	...	2,938

II. Public Health

Milk	427
Water analysis	56
Medicinal preparations	123
Foodstuffs	81
Total ...	687

III. Customs and Excise

Rum (furfuraldehyde and Estimation of alcohol)	166
Power Alcohol (acidity)	242
Total ...	408

IV. Forensic

Medico-legal	32
Revenue offences	155
Dangerous drugs (Opium, Gandia)	133
Total ...	320

V. Miscellaneous

Chinese drugs	6
Coal tar	4
Paint	1
Textiles	11
Canned foods	82
Sulphur dioxide in beverages ...	3
Poisons in dyes	6
Soda water	1
Citric acid in milk	1
Water in petrol	12
Total ...	127

On the 427 milk samples received for analyses:—

58 per cent as compared with 81 per cent in 1948, contained at least 3 per cent of water, 10 per cent were skimmed milk as compared with 12·3 per cent in 1948.

2·8 per cent were boiled milk as compared with 5·6 per cent in 1948 and six had sucrose added.

The milk position has thus slightly improved but it is however far from satisfactory. The number of vendors is very large, over 4,000, so that as little as a bi-annual individual check would entail 8,000 analyses per year, roughly eighteen times the number undertaken this year. This is impracticable with the laboratory as at present constituted.

Of the 56 samples of water examined, 46 were taken in connection with monthly examination of Port Louis and Mare-aux-Vacoas water works. Of the other samples of water, 10 were taken in connection with the pollution of rivers by sugar factories. The integreted results of these analyses strongly indicated the need of a survey of the quantity and quality of pollution caused in river waters by industrial water waste in the colony.

Several samples of viscera of domestic pets which had died suddenly were examined but no poisonous substances were found.

In a suicidal case investigated, it was found that the deceased person had drunk the full content of an alcohol lamp containing pyridine and methyl alcohol.

Among the remainder of the poisonous samples analysed, arsenic, cyanides, strychine and nitric acid were detected.

Alcohol—samples of blood were taken from persons who were involved in vehicular accidents so that alcoholic content of the samples could be estimated, in order to ascertain if some degree of intoxication was indicated.

Several canned foods were sent to the laboratory for investigation, they were found to be very old, rusted and containing a concentration of dissolved tin well above the permissible limit.

The Government Chemist continued to give advice and assistance of a practical nature when sought to other departments of Government as well as to commercial firms and individuals on a variety of subjects of a chemical nature.

W. DIAPER,
Government Chemist.

12th March, 1950.

Annual Report of the Civil Hospital Branch Laboratory for the year 1949

I. MEDICAL BIOLOGY

4,993 SIMPLE ROUTINE CLINICAL EXAMINATIONS WERE MADE

(a) *Blood. (Microscopical)*

Total number examined	242
Films for malaria:	
Plasmodium vivax	1
Plasmodium falciparum	10
Undetermined rings	5
No parasites found	203
Films for microfilariae:	
Wuchereria bancrofti	6
No microfilariae	17

(b) *Faeces (Microscopical)*

Total number examined	2,675
Helminths:	
Trichuris ova	501
Ascaris ova	236
Hookworm ova	775
Trichostrongyle ova	3
Strongyloides larvae	42

Protozoa:

Entamoebae histolytica	159
Entamoebae coli	87
Vegetative and precystic entamoebae	64
Endolimax nana	53
Clardia intestinalis	79
Chilomastix mesnili	9
Trichomonas intestinalis	83
Blastocystis hominis	168
No helminths or protozoa	1,009

(c) *Urine (microscopical)*

Total number examined	2,076
Hyaline casts	39
Granular casts	213
Waxy casts	46
Cellular casts	52
Leucocytic casts	14
Red blood cells casts	2
Schistosonum haematobium	237
Trichomonas vaginalis	35

II. BACTERIOLOGY

1,161 Microspical Examinations were made

(a) *Sputum (Microscopical)*

Total number examined	926
Mycobacter. tuberculosis	201

(b) *Nasal and Throat Swabbings (Microscopical)*

Total number examined	102
Corynebact. diphtheriae	33
Vincent's organisms	3

(c) *Pus, Discharges, and Scrapings, etc., (Microscopical)*

Total number examined	133
Neisseriae gonorrhoeae	3
Staphylococci	1

III. HAEMATOLOGY

Routine Blood Examination

Total number examined	1,067
Total counts of red and white cells and haemoglobin determinations	604
Differential counts (leucocyte)	423
Blood grouping	20
Blood picture	1
Blood sedimentation rate	19

IV. BIOCHEMISTRY

Total number examined	2,069
Quantitative estimations of glucose	225
Quantitative estimations of albumen	78
Quantitative test for determination of acetone	40
Qualitative test for determination of bile	20

V. MISCELLANEOUS

Total number examined	16

Total number of Examinations: 9,306

Annual Report of the Victoria Hospital Branch Laboratory for the year 1949

I. MEDICAL BIOLOGY

3,044 Microscopical Examinations were made

(a) *Blood (Microspical)*

Films for malaria:	
Plasmodium malariae	6
Plasmodium vivax	11
Plasmodium falciparum	9
Undetermined rings	3
No parasites found	511
Films for microfilariae:	
Wuchereria bancrofti	11
No microfilariae	46
Total	597

(b) *Faeces (Microscopical)*

Total number examined	1,443
Helminths:	
Trichuris ova	568
Ascaris ova	265
" Hookworm " ova	679
Strongyloides larvae	65
Entorobius vermicularis ova	2
Heterodera marioni ova	2
Protozoa:	
Entamoebae histolytica	54
Entamoebae coli	63
Balantidium coli	1
Vegetative and precystic entamoebae	17
Dientamoebae fragilis	2
Endolimax nana	33
Giardia intestinalis	52
Chilomastix mesnili	14
Trichomonas intestinalis	44
Blastocystis hominis	328
No helminths or protozoa	279

(c) *Urine (Microscopical)*

Total number examined	1,004
Hyaline casts	125
Blood casts	5
Waxy casts	5
Leucocytic casts	26
Granular casts	114
Cellular casts	21
Schistosoma haematobium	57
Trichomonas vaginalis	77

II. BACTERIOLOGY

530 Microscopical Examinations were made

(a) *Sputum (Microscopical)*

Total number examined	392
Mycobacter. tuberculosis	54

(b) *Nasal and Throat Swabbings (Microscopical)*

Total number examined	8
Corynebact. diphtheriae	1
Vincent's organisms	1

(c) Pus, *Discharges, and Scrapings, etc., (Microscopical)*

Total number examined	130
Neisseria gonorrhoeae	11

II. HAEMATOLOGY

Total number examined	1,044
Total counts of red and white cells and haemoglobin determinations	747
Differential leucocyte counts	297

IV. BIOLOGICAL

(a) *Urine*

Total number examined	275
Quantitative estimations of glucose	105
Quantitative estimations of albumen	3
Qualitative tests for determination of acetone ...	42
Qualitative tests for determination of bile	14

Total number of Examinations: 4,893

Report of the Work of the Division of Entomology

FOREWORD

In March 1949, the writer, in addition to his duties with the Medical and Health Department took over those of Entomologist of the Colonial Insecticide Committee's Malaria Eradication Scheme, now operating in the Colony, after its Entomologist had resigned and left the island. The writer who had been doing research work, since 1946, in connection with the application of residual sprays, was thus enabled to continue to maintain a full interest in the subject and is thankful to Dr. A. Rankine, the Director of Medical Services, for having allowed him to do so. The result has been a fruitful collaboration of the two entomological services for the common good. I take this opportunity of thanking them for their very efficient and loyal cooperation. Miss F. Webb of the M.E.S., deserves special mention for her help, in the laboratory, and in the preparation of this report.

I am grateful to Mr. L. Legrigore, of the Bacteriological Laboratory, whose assistance, on the clerical side, has been much appreciated.

Mosquito Surveys before and after the Application of D.D.T.

The mosquito census started in 1946, in Black River, and gradually extended to other parts of the sea-board, had to come to an end with the island-wide treatment of dwellings with residual sprays. Fortunately, before being caught up by the spraying gangs, we were able to complete the peripheral survey of the island and to do a few of the upper regions, as well. The figures obtained are extremely valuable as, by contrasting them with those showing the number of mosquitos found after spray applications, we are able to assess these sprays at their exact value.

The following table shows the number of mosquitos found after day-time knock-downs:—

TABLE A

District Census of the Adult Mosquito Population made Chiefly in the Dwellings of the Coastal Belt Before the Application of D.D.T.

Date	Locality	No. of dwellings searched	No of rooms in the dwellings	No. of adult mosquitoes found					
				A funestus		*A. gambiae*		*C. fatigans*	
				♀	♂	♀	♂	♀	♂
1949	Pamplemousses—Riviere du Rempart								
Jan. 4– 5	Cap Malheureux	23	71	82	—	156	2	312	93
,, 6	Grand Gaube	15	40	—	—	1	—	121	4
,, 7–11	Roches Noires	34	105	1	—	211	2	189	—
,, 13	Palmar	3	10	—	—	13	—	19	—
,, 21–22	Poudre d'Or	21	50	29	—	1	—	113	1
,, 24	Ile d'Ambre	5	19	371	8	30	—	52	2
,, 24	Haute Rive	6	14	564	10	8	—	226	—
,, 25	Solitude	17	43	—	—	—	4	505	51
,, 26	Ruisseau Rose	15	43	26	2	—	—	213	26
,, 27–28	Crêve Cœur	24	49	362	26	—	—	158	6
,, 28	L'Industrie	1	2	39	4	—	—	7	—
,, 28	Boulingrin	5	7	107	14	—	—	13	1
	Valton	3	11	20	—	—	—	39	2
	Flacq								
Jan. 13	Trou d'Eau Douce	9	25	16	—	72	6	121	7
,, 14	Pointe aux Feuilles	2	5	—	—	—	—	32	—
,, 14	Quatre Soeurs	15	23	12	1	—	—	321	48
,, 18– Feb. 8	Trou d'Eau Douce	122	294	869	2	55	—	400	23
Feb. 7	Pont Blanc	14	28	365	133	20	—	25	—
,, 8–9	Rivière Sèche	19	39	545	9	5	—	37	—
,, 9	Beau Rivage	9	33	3	—	—	—	18	—
,, 11–12	Bel Air	32	75	102	—	2	—	202	10
,, 14–15	Grand River S.E.	42	83	15	—	34	1	321	80
,, 16	La Lucie	11	31	553	82	—	—	926	10

TABLE A—*continued*

DISTRICT CENSUS OF THE ADULT MOSQUITO POPULATION MADE CHIEFLY IN THE DWELLINGS OF THE COASTAL BELT BEFORE THE APPLICATION OF D.D.T.

Date	Locality	No. of dwellings searched	No. of rooms in the dwellings	No. of adult mosquitos found					
				A. funestus		*A. gambiae*		*C. fatigans*	
				♀	♂	♀	♂	♀	♂
1949	FLACQ—(*contd*)								
Feb. 17–25	Bel Air	44	109	1,030	84	4	—	391	11
March 1	Belle Rose	57	119	1,355	52	39	1	562	26
,, 5	Clémencia	29	58	841	52	79	—	222	—
,, 8	Mare Jacquot	23	47	—	—	1	—	113	—
,, 9	Beau Vallon Fabre	15	33	—	—	—	—	82	—
,, 10	Deep River	22	45	2	—	—	—	339	102
,, 11	La Nourrice	18	40	3	—	—	—	291	50
,, 12–14	Olivia	38	73	—	—	1	—	616	131
,, 31	Constance	14	63	—	—	1	—	137	16
April 1	,,	15	56	—	—	1	—	157	14
,, 12	Mare Carrée	13	33	1	—	—	1	46	4
,, 13	Belle Rose	16	33	888	24	20	5	101	6
,, 14	,,	8	17	23	—	2	—	43	3
,, ,,	Montagne Bambous	23	44	—	—	—	—	183	4
,, 16	Camisard	11	21	—	—	—	—	228	18
1949	BLACK RIVER								
Feb. 22	Mon Désir	15	31	1,461	64	351	—	76	—
March 18	Camp Créoles (Albion)	20	38	1	—	1	—	9	—
,, 24	,,	24	54	33	3	2	—	97	29
,, 25	,,	25	55	146	30	12	2	136	23
1949	GRAND PORT								
Jan. 17	Bambous	26	49	81	8	6	—	746	133

TABLE B

District Census of the Adult Mosquito Population made Chiefly in the Dwellings of the Coastal Belt After the Application of D.D.T.

Date	*Locality*	*No. of dwellings searched*	*No. of rooms in the dwellings*	*No. of adult mosquitos found*					
				A. funestus		*A. gambiae*		*C. fatigans*	
				♀	♂	♀	♂	♀	♂
1949	PORT LOUIS								
Feb. 26–28	Route Nicolay	28	77	—	—	—	—	52	—
Aug. 31	Vallée-des-Prêtres	29	51	—	—	—	—	13	—
Sept. 22	G.R.N.E.	24	57	—	—	—	—	19	—
1949	MOKA								
Sept. 17	Montebello	5	16	—	—	—	—	14	11
,, 19–21	Pailles	64	161	—	—	1	—	125	3
,, 20–21	Les Guibies	28	57	—	—	—	—	43	—
1949	FLACQ								
April. 20	Poste-la-Fayette	18	46	—	—	—	—	18	1
May 26	Pont-Blanc	26	50	*7	—	—	—	52	—
,, 27	Bel-Air	23	63	1	—	—	—	56	3
,, 28–30	Hermitage	50	97	31	5	3	—	82	5
,, 31	Clemencia	31	53	—	—	—	—	37	1
June 1	do.	29	52	2	—	—	—	30	1
,, 2	Belle-Rose	22	43	*13	—	—	—	43	—
Oct 7	Mare-la-Chaux	36	72	—	—	—	—	20	—
Aug. 1	Pont-Blanc	23	44	—	—	—	—	68	—
Sept. 23	do.	31	57	—	—	—	—	123	—
Oct. 7	Mare-la-Chaux	36	72	—	—	—	—	20	—
,, 10	Belle-Mare	35	69	—	—	—	—	14	—
,, 11	Mare-du-Puits	7	10	—	—	—	—	—	—
,, 11	Quatre-Cocos	29	61	—	—	—	—	1	—
,, 12	do.	27	60	—	—		—	38	—
,, 12	Palmar	3	9	—	—	—	—	—	—
,, 13–14	Trou-d'eau-Douce	59	134	—	—	—	—	7	—
Dec. 1	Beau Rivage	13	43	—	—	—	—	10	—
,, 28	Pont Blanc	31	54	—	—	—	—	71	—

*an unsprayed hut.

TABLE B.—*continued*

DISTRICT CENSUS OF THE ADULT MOSQUITO POPULATION MADE CHIEFLY IN THE DWELLINGS OF THE COASTAL BELT AFTER THE APPLICATION OF D.D.T.

Date	*Locality*	*No. of dwellings searched*	*No. of rooms in the dwellings*	*No. of adult mosquitos found*					
				A funestus		*A. gambiae*		*C. fatigans*	
				♀	♂	♀	♂	♀	♂
1949	GRAND PORT								
March 23–24	Anse Jonchée	24	56	—	—	—	—	5	—
April 21	Camp Esnouf—Union Vale	28	56	—	—	14	1	182	10
May 25	Camp Esnouf	27	50	—	—	2	—	30	—
Sept. 7–8	La Sourdine	69	159	—	—	—	—	445	28
,, 9	Rivière des Créoles	35	77	—	—	—	—	17	—
Dec. 8–9	La Barraque	41	78	—	—	—	—	388	2
,, 10	Savinia S.E.	10	43	—	—	—	—	58	—
1949	SAVANNE								
June 22	Bénarès S.E.	28	38	—	—	—	—	1	—
,, 23	,, ,,	30	62	—	—	—	—	6	—
,, 24	Bel Air (St. Félix)	19	65	—	—	—	—	11	—
,, 27	Senneville S.E.	24	72	—	—	—	—	60	—
,, 28	,, ,,	20	75	—	—	—	—	89	2
,, 29–30	Rivière des Anguilles	49	132	—	—	—	—	149	3
July 1	,, ,,	28	78	—	—	—	—	50	—
,, 4	,, ,,	33	77	—	—	—	—	89	2
,, 5	Souillac	25	87	—	—	—	—	37	—
,, 6	,,	28	80	—	—	—	—	39	1
,, 7	,,	22	80	—	—	—	—	42	1
,, 8	,,	30	92	—	—	—	—	27	—
,, 9	Surinam	16	43	—	—	—	—	69	6
,, 11	Riambel	13	27	—	—	—	—	4	—
,, 11	Beau Champ	13	60	—	—	—	—	39	—
,, 12	Bel Ombre	21	93	—	—	—	—	25	—
,, 13	St. Martin	33	76	—	—	—	—	57	7
,, 14	Toulette and St. Martin	28	46	—	—	—	—	58	—
,, 15	St. Martin	34	84	—	—	—	—	38	1
,, 16	St. Aubin	14	52	—	—	—	—	35	3
,, 18	St. Martin and Baie du Cap	33	86	—	—	—	—	58	2
,, 19–20	Baie du Cap	67	176	—	—	—	—	62	—

TABLE B—*continued*

District Census of the Adult Mosquito Population made Chiefly in the Dwellings of the Coastal Belt After the Applications of D.D.T.

Date	Locality	No. of dwellings searched	No. of rooms in the dwellings	No. of adult mosquitos found					
				A. funestus		*A. gambiae*		*C. fatigans*	
				♀	♂	♀	♂	♀	♂
	SAVANNE—*continued*								
July 21–22	Baie du Cap and MaCondé	21	52	--	—	—	—	10	1
,, 21–25	Choisy Est.	47	117	—	—	—	—	46	2
Sept. 5– 6	Savanah S.E	42	174	--	—	—	—	455	64
Dec. 29	Bel Ombre	19	88	—	—	—	—	370	1
	BLACK RIVER								
April 2– 4	Petite Rivière	43	89	—	—	1	—	262	52
,, 5	La Chaumière	14	32	—	—	—	—	27	27
,, 6	Petite Rivière	25	70	2	—	1	—	95	33
,, 7	Petite Rivière	25	54	—	—	—	—	102	16
,, 9	Flic-en-Flacq	14	33	—	—	—	1	10	2
May 21	Pointe aux Sables	13	36	—	—	—	—	49	8
June 3	Grande Rivière Noire	32	75	1	—	—	—	52	6
,, 6	Bambous (Geffroy)	26	75	—		4	—	71	7
,, 7	Bambous (Belle Isle)	30	70	—	—	—	—	126	22
,, 8	Bambous	30	64	—	—	—	—	112	15
,, 10	,,	33	74	—	—	—	—	154	25
,, 11	,,	14	31	—	—	—	—	78	3
,, 13	,,	33	71	—	—	—	—	90	5
,, 14	,,	29	70	—	—	—	—	92	5
,, 15	Médine Estate (Camp Lalah and Camp Galets)	26	65	—	—	—	—	54	2
June 25	Flic-en-Flac	19	44	—	—	—	—	8	—
July 26	Camp Créoles (Albion)	24	54	—	—	—	—	6	—
,, 30	Flic-en-Flac "Anna" "Verger"	18	49	—	—	—	—	21	—
Aug. 9	Petite Rivière-Noire	35	75	—	—	—	—	861	448
Sept. 14	Palmyre, Clarence, Constance	23	60	—	—	—	—	30	1
,, 15	Camp Raffin and Camp Laboue	24	46	—	—	—	—	19	—
,, 16	Cascavelle	26	63	—	—	—	—	5	—
Oct. 15	Flic-en-Flac	14	36	—	—	—	—	6	—
,, 22	Petite-Rivière	19	37	—	—	—	—	10	—
Nov. 19	Anna "Verger"	7	21	—	—	—	—	50	5
Dec. 17	Camp Créoles (Albion)	21	40	—	—	—	—	56	5
,, 24	Gros Cailloux	18	43	—	—	—	—	84	9

The table shows that instead of the thousands of *A. funestus* found at Belle Rose, Bel Air Pont Blanc and in several other places, before D.D.T., none were encountered after. At Hermitage and Clémencia, 38 *A. funestus* were found. These were obtained only a couple of weeks after the first application of D.D.T., their numbers however gradually diminished and, after the second spraying at the beginning of summer, they completely disappeared.

The effect of D.D.T. on *A. gambiae* cannot in light of experience in Mauritius be accurately assessed. The fall in adult catches after spraying was marked although after some time the mosquito could be found periodically in sprayed houses where permanent *A. gambiae* breeding grounds existed. Despite this, however, the application of D.D.T. to internal surfaces of buildings failed to have any effect on breeding of *A. gambiae* since, with the onset of summer rains, the breeding of this species was as prolific as ever.

The table shows no gambiae after June, in the coastal belt, because their numbers had been considerably reduced by the severe drought which prevailed during the second half of the year. All the minor, and most of the major breeding-grounds had dried up.

The study of the night movements of Anophelines in dwellings treated with D.D.T.

We have so far dealt with the day-time surveys of the treated houses which show that, a few days after spraying, *A. funestus* begin to grow scarce and that finally they never reappear. To be certain that their day-time absence means that they are not present at night, an experiment on the subject, started by me in 1948, was repeated and extended.

The results, shown in the accompanying table, confirm the findings made last year, namely, that *A. funestus* when absent from treated habitations, during the day, are absent at night also.

TABLE C

Table Showing the Results of Night "Knock-Downs" in Huts Treated with D.D.T.

Date	Locality	No. of dwellings searched	No. of rooms	No. of Adult mosquitos found					
				A. funestus per catch		*A. gambiae* per catch		*C. fatigans* per catch	
				Before DDT	*After DDT*	*Before DDT*	*After DDT*	*Before DDT*	*After DDT*
	Flacq								
16th Feb. 1949	La Lucie	11	31	635	—	—	—	936	—
22nd March ,,	do	1st DDT Spraying		—	—	—	—	—	—
12th Aug. ,,	do	15	38	—	—	—	—	—	76
7th Feb. ,,	Pont Blanc	14	28	1,498	—	20	—	25	—
23rd Feb. ,,	do	1st DDT Spraying		—	—	—	—	—	—
11th Aug. ,,	do	26	49	—	—	—	—	—	142
14th Nov. ,,	do	31	54	—	—	—	—	—	37
	Grand Port								
6th Aug. 1948	Anse Jonchée	18	48	41	—	—	—	28	—
18th Jan. 1949	do	1st DDT Spraying		—	—	—	—	—	—
17th March ,,	do	39	71	—	1	—	—	—	207
July 1947	Camp Esnouf	15	34	2,921	—	432	—	73	—
6th Aug. ,,	do	1st DDT Spraying		—	—	—	—	—	—
23rd Aug. 1949	do	16	33	—	—	—	—	—	38
July 1947	Union Vale	29	146	2,893	—	525	—	276	—
31st July ,,	do	1st DDT Spraying		—	—	—	—	—	—
24th Aug 1949	do	15	35	—	—	—	—	—	18
	Black River								
18th Dec. 1948	Camp Créoles	10	20	501	—	—	—	317	—
10th March 1949	do	1st DDT Spraying		—	—	—	—	—	—
13th May ,,	do	22	39	—	4	—	—		72
10th Aug. ,,	do	23	46	—	—	—	—	—	9
July–Sep. 1946	Flic-en-Flac	13	54	2,245	—	—	—	7	—
Sep.–Oct. ,,	do	1st DDT Spraying		—	—	—	—	—	—
16th Aug. 1949	do	17	42	—	4	-	2	—	20
Aug. 1946	La Retraite	14	41	168	—	10	—	260	—
Sep.–Oct ,,	do	1st DDT Spraying		—	—	—	—	—	—
18th Aug. 1949	do	16	46	—	—	—	1	—	58
Sept. 1946	Camp Gallets	13	46	500	—	38	-	700	-
Sep.–Oct, 1946	do	1st DDT Spraying		—	—	—	—	—	—

In the district of Grand Port, Camp Esnouf and Union Vale have been under D.D.T. for just over thirty months, while Anse Jonchée was treated for the first time, by the Malaria Eradication Scheme Staff, only a year ago. When the first night " knock-down " was made, a month after, only one adult *A. funestus* was found.

In the district of Flacq, La Lucie and Pont Blanc have been under D.D.T. only a year and, in both localities, the first night knock-downs, made five months after, revealed no anophelines.

Black River district presents a somewhat different picture. There, Camp Gallets, La Retraite and Flic-en-Flac have all been under D.D.T. for *just over three years*. In the two former places, neither adults nor larvae of *A. funestus* have been found for nearly two years.

At Flic-en-Flac, however, four adult *A. funestus* were found during the night " knock-down " made in August last. This is undoubtedly an overflow from the nearby settlement of Wolmar where those of the huts which were treated with " Gamexane " were never free from *A. funestus*.

At Camp Creoles 4 adults were found, but in unsprayed huts.

The Biological Control of Dwellings treated with " Gamexane "

As in other parts of the world Benzene Hexachloride seemed to give promising results, the Malaria Eradication Scheme put it on trial in the districts of Pamplemousses and Rivière du Rempart under the form of wettable powder.

As *A. funestus* and *A. gambiae* are found in greater numbers along the coastal belt, in localities where habitations are not far from marshes and springs which breed both anophelines all the year round, certain areas in these localities were chosen for surveying. The dwellings were visited periodically, at approximately monthly intervals ; knock-downs were made, and the insects collected were sorted out and counted. The following tabulation shows the results:—

TABLE D

Comparative Statement showing number of anophelines collected after " knock-downs " before and after treatment of dwellings with B. H. C. wettable powder

Locality	*Before spraying*				*After spraying*				
	Date of search	*No. of houses*	*No. of A. funestus*	*No. of A. gambiae*	*Date of spraying*	*Date of search*	*No. of houses*	*No. of A. funestus*	*No. of A. gambiae*
	1948				1949				
Tombeau-Bridge Village ...	—	—	—	—	Feb. 5	Ap. 28	48	—	275
,, ...	—	—	—	—	,,	July. 25	23	—	1
,, ...	—	—	—	—	,,	Oct. 4	44	1	3
,, ...	—	—	—	—	,,	Nov. 21	33	—	—
,, ...	—	—	—	—	Feb. 5	,, 26	14	—	—

TABLE D—*continued*

Locality	*Before spraying*				*After spraying*				
	Date of search	*No. of houses*	*No. of A. funestus*	*No. of A. gambiae*	*Date of spraying*	*Date of search*	*No. of houses*	*No. of A. funestus*	*No. of A. gambiae*
	1948				1949				
Petit Gamin ...	—	—	—	—	Jan. 21	Mar. 30	25	—	21
,, ...	—	—	—	—	,,	Apr. 22	24	2	124
,, ...	—	—	—	—	,,	May 25	25	1	38
,, ...	—	—	—	—	,,	Jul. 27	21	—	9
,, ...	—	—	—	—	,,	Aug. 22	19	2	5
,, ...	—	—	—	—	,,	Oct. 1	14	—	—
,, ...	—	—	—	—	,,	Oct. 29	17	1	1
,, ...	—	—	—	—	,,	Nov. 17	22	—	—
,, ...	—	—	—	—	,,	Dec. 6	25	—	—
Ville-Valio	Dec. 4	4	514	2	Jan. 21	Aug. 23	6	3	119
,, ...	,,	—	—	—	Sep. 19	Oct. 5	3	—	—
,, ...	,,	—	—	—	,,	Dec. 6	3	—	—
Trou.aux-Biches ...	Dec. 21	18	—	—	Feb. 2	Mar. 23	48	—	7
,, ...	,,	—	—	—	Sep. 16	Sept 26	59	—	—
,, ...	,,	—	—	—	,,	Nov. 15	33	—	—
,, ...	,,	—	—	—	,,	Dec. 7	22	—	—
	1949								
Cap Malheureux ...	Jan. 4	12	82	55	Apr. 20	Jul. 7	86	—	17
,, ...	,,	—	—	—	,,	,, 12			
,, ...	,,	—	—	—	,,	Aug. 4	63	—	1
,, ...	,,	—	—	—	Sept. 9	Oct. 31	29	—	—
,, ...	,,	—	—	—	,,	Dec. 21	88	—	—
,, ...	,,	—	—	—	,,	,, 23			
Ile d'Ambre ...	Jan. 24	5	379	30	May 9	May. 17	4	168	4
,, ...	Apr. 19	5	619	14	,,	Jul. 29	5	6	2
,, ...	,,	—	—	—	Aug. 30	Sept. 23	5	—	—
,, ...	,,	—	—	—	,,	,, 29	5	—	—
,, ...	,,	—	—	—	,,	Oct. 17	5	—	—
,, ...	,,	—	—	—	,,	Nov. 10	5	—	—
,, ...	,,	—	—	—	,,	Nov. 22	5	3	—
,, ...	,,	—	—	—	,,	,, 28	5	3	—
,, ...	,,	—	—	—	,,	Dec. 13	5	2	—
,, ...	,,	—	—	—	,,	4. 1.50	4	—	2
Hermitage	Apr. 19	18	923	63	May 9	May 17	8	309	5
,, ...	,,	—	—	—	,,	Jul. 29	12	—	—
,, ...	,,	—	—	—	Aug. 30	Sept. 2	12	—	—
,, ...	,,	—	—	—	,,	,, 29	12	—	—
,, ...	,,	—	—	—	,,	Oct. 17	12	—	—
,, ...	,,	—	—	—	,,	Nov. 11	12	5	—
,, ...	,,	—	—	—	,,	Nov. 22	11	1	—
, ...	,,	—	—	—	,,	Nov. 28	11	—	—
,, ...	,,	—	—	—	,,	Dec. 13	11	—	—
,, ...	,,	—	—	—	,,	4. 1.50	8	4	—
Pointe Lascars ...	,,	—	—	—	May 9	Aug. 8	30	71	—
,, ...	,,	—	—	—	Aug. 30	Sept. 1	32	—	—
,, ...	,,	—	—	—	,,	,, 28	33	3	—
,, ...	,,	—	—	—	,,	Oct. 18	33	5	—
,, ...	,,	—	—	—	,,	Nov. 11	27	23	—
,, ...	,,	—	—	—	,,	,, 23	26	14	—
,, ...	,,	—	—	—	,,	Dec. 14	28	2	—
,, ...	,,	—	—	—	,,	5. 1.50	25	49	—
Haute Rive ...	Jan. 24	6	574	—	May 9	Jul. 17	4	1	—
,, ...	,,	—	—	—	Aug. 30	,, 28	4	15	—
,, ...	,,	—	—	—	,,	Sept. 2	5	—	—
,, ...	,,	—	—	—	,,	,, 29	5	—	—
,, ...	,,	—	—	—	,,	Oct. 17	5	24	—
,, ...	,,	—	—	—	,,	Nov. 10	5	38	—
,, ...	,,	—	—	—	,,	,, 22	5	24	—
,, ...	,,	—	—	—	,,	,, 28	5	53	—
,, ...	,,	—	—	—	,,	Dec. 13	5	71	—
,, ...	,,	—	—	—	,,	4. 1.50	5	208	—

In addition to the survey in the B.H.C. treated zone, it was thought that interesting comparative figures would be obtained by treating some huts in a selected area, with B.H.C. and others with D.D.T. Fortunately the Wolmar settlement which has been kept as an experimental area was available for this particular purpose. There, the huts are scattered chiefly on the borders of a stretch of road, a mile long, in the middle of a marsh complex linked by numerous streams and canals. *A. funestus* is always present in fairly large numbers, in all the dwellings, at any time of the year. *A. gambiae* though breeding less intensively is nevertheless also present. The table below, shows the findings:—

TABLE E

COMPARATIVE STATEMENT SHOWING THE DIFFERENCE BETWEEN THE NUMBER OF ANOPHELINES COLLECTED, AFTER "KNOCK-DOWNS", IN THE HUTS TREATED WITH B.H.C. AND IN THOSE TREATED WITH D.D.T. AT WOLMAR

	Control Hut		*Sprayed Hut*			
			4 B.H.C. Huts sprayed August 16th		*5 D.D.T. Huts sprayed August 5th*	
Date of catch	*Unsprayed*					
	A. funestus	*A. gambiae*	*A. funestus*	*A. gambiae*	*A. funestus*	*A. gambiae*
1949						
August 17 ...	121	—	8	—	5	—
August 26 ...	130	—	39	—	14	—
September 3 ...	62	1	1	—	—	—
September 12 ...	179	—	11	1	1	—
September 25 ...	73	—	14	—	—	—
October 8 ...	25	—	44	—	1	—
October 27 ...	92	—	38	—	1	—
November 5 ...	14	—	4	—	—	—
November 12 ...	52	—	22	—	—	—
December 3 ...	51	2	33	2	1	—
December 19 ...	86	3	42	1	—	—
December 27* ...	—	—	40	1	—	—
1950						
January 7 ...	58	—	70	8	—	—

A study of Table D shows that about four or five weeks after spraying with B.H.C., anophelines begin to reappear in the huts. In some cases they were encountered even before that lapse of time, as at Hermitage. At Trou-aux-Biches, as in other localities, *gambiae* breeding was going on at such an alarming rate that intensive oiling had to be resorted to. This is why the table shows a sudden drop to O at Trou-aux-Biches, Cap Malheureux, Hermitage and Ile d'Ambre.

*Hut closed on that day.

When we study Table E which shows the results of the Wolmar experiment, we find that at no time was *funestus* absent from the huts treated with B.H.C. Those found in the huts treated with D.D.T. on 17th and 26th August, were collected during night " knock-downs ", between 20–23 hrs. It seems that they had not rested anywhere, as not one of them had had a blood meal.

All the other " knock-downs " were made during the day between 9 and 15 hours. This means that the insects found, which were all gorged with blood, had been resting on the walls for 6–12 hrs., or longer in the case of insects which has entered during the early hours of the preceding night.

During biological tests, in the laboratory, B.H.C. showed a strong lethal effect against *A. gambiae* but, after some time, its action began to weaken, to become negligible after six weeks. Anophelines hand-caught in treated huts, at Petit-Gamin and Trou-aux-Biches and brought to the laboratory, when they are bred, lived for several days after.

The conclusions drawn from the results of these investigations are that " Gamexane " had proved inferior to D.D.T. as regards duration of residual effect and that its further use was not justified. It was consequently abandoned.

The Present Distribution of the Anophelines

A. funestus

This anopheline which was our predominant malaria carrier has now disappeared from all dwellings in the areas under D.D.T., except Grande Rivière-Noire and Tamarin. In the above-mentioned places, all searches for larvae have been in vain. *A. funestus* is also getting scarcer in Pamplemousses and Rivière du Rempart now that D.D.T. has replaced " Gamexane " in those districts. Wolmar is the only other spot where *A. funestus* can be found, in those huts which were under B.H.C.

A. gambiae

With the reappearance of a normal rainy season and the simultaneous cessation of oiling, *A gambiae* is now the common mosquito which it used to be. At the time of writing, there is hardly a collection of water which does not contain hundreds of larvae. In certain places they are so numerous that one acquires the impression that *A. gambiae* is striving to fill, in numbers, the place left by *A. funestus*.

A. maculipalpis

This is another anopheline which has been unaffected by D.D.T. From rare, that it used to be, it is now fairly common all over the island.

A. melas

Greater attention has been paid this year to the search for this anopheline. The result is that *A. melas* has been found to be fairly common in brackish-water pools all round the island.

The above remarks apply to findings in the lower regions of the island. The central plateau formed of Upper Plaines Wilhems and Moka is relatively anopheline-free. When, on extremely rare occasions, one is encountered, it always turns out to be *A. gambiae*.

Musca domestica

There has been a general complaint that house-flies have been more troublesome than usual and that they are unaffected by the various sprays usually employed and by the D.D.T. residues in dwellings.

This unfortunately seems to be true. During the first weeks of D.D.T. application, at the beginning of the year, one could see numerous dead flies lying about in treated buildings but now one can notice flies walking on window panes whitened by D.D.T., and dead flies are no longer seen on the sills. One point worth noting is that all the sprays brought to my notice, with complaints as to their inefficiency, contained D.D.T. as active principle. The reason for this apparent resistence has to be found. Does it mean that climatic conditions favourable to flies have enabled a hardier strain to come to life this year ; or is it an acquired resistance to D.D.T. ?

To try and solve the problem, comparative biological tests will be made with flies caught in treated and in untreated zones.

S. GÉBERT,
Entomologist, Medical Services.

6th April, 1950.

Appendix II

Report on the Mental Hospital for the year 1949

The total number of certified insane persons in the Colony on 31st December, 1949, was 1,069, as compared with 1,008 on 31st December, 1948.

Distribution of the 1,069 certified insane persons on 31st December, 1949.

	Males	*Female*	*Total*
at Mental Hospital	353	260	613
on probation leave	232	170	402
on leave under G.N. 239/24 ...	23	31	54
TOTAL ...	608	461	1,069

2. The insane rate per 10,000 of the population of the Island was 24: the estimated mid-year population in 1949 was 444,521.

3. The percentage sex distribution of the 1,069 certified insane persons was: males 56·8, females 43·2.

Hospital Population

4. There were 623 persons in hospital (males 360, females 263) on 31st December, 1949. Of these, 7 males and 3 females were under interim detention pending a decision as to their mental state, so that the total number of certified insane persons on the above date was 613. The daily average number resident was 682 (males 385, females 297) compared with 659 (males 370, females 289) in 1948. The maximum number resident in hospital was 706.

Admissions

	Males	*Females*	*Total*
1st admission certified patients	71	67	138
2nd ,, ,, ...	16	7	23
3rd ,, ,, ...	2	2	4
4th ,, ,, ...	2	—	2
5th ,, ,, ...	—	1	1
Readmissions from probation leave ...	80	61	141
Total ...	171	138	309

5. The above table shows that in 1949 there were admitted into the Mental Hospital as certified insane persons (1st, 2nd, 3rd, 4th and 5th admissions) a total of 168 (males 91, females 77) compared with 191 (males 104, females 87) in 1948.

Causes of insanity

6. As usual heredity, alcohol, mental stress and epilepsy are prominent etiological factors.

Discharges

7. The total number of discharges during the year was 272, as against 256 in 1948.

The following table shows the classification of discharges for 1949:—

	Males	*Females*	*Total*
Discharged recovered ...	2	—	2
Discharged relieved	136	130	266
Discharged not improved ...	3	1	4
Total ...	141	131	272

The percentages of discharges to admissions (direct admissions plus readmissions from probation) was 88·0 (male 82·4, females 90·3) compared with 79·5 (males 83·4, females 75·3) in 1948.

During the year, 129 patients (males 69, females 60) out on probation leave, were found cured and finally discharged.

Deaths

8. During the year there were 34 deaths (males 20, females 14) compared with 38 (males 20, females 18) in 1948.

The death rate calculated on the daily average number of resident patients was 4·99 per cent compared with 5·18 per cent in 1948, 7·06 per cent in 1947 and 9·09 per cent in 1946.

Classification of deaths during 1949

	Males	*Females*	*Total*
Epidemic, endemic and infectious diseases ...	3	—	3
General diseases not mentioned above ...	—	3	3
Affections of the nervous system and organs of the senses	2	—	2
Affections of the circulatory system	6	5	11
Affections of the respiratory system	4	3	7
Affections of the digestive system	1	1	2
Affections of the genito-urinary system ...	4	1	5
Affections of old age	—	1	1
TOTAL ...	20	14	34

Three post mortem examinations were made during the year.

Infections and allied diseases

9. There were 39 cases of dysentery, 20 of which were amoebic, 15 bacillary and 4 ill-defined. Malaria cases numbered 29 and Influenza accounted for 67 cases. There were three cases of Typhoid Fever. The incidence of Typhoid Fever has been steadily declining since preventive inoculation of all admissions was started. No fresh case has occurred since March.

Avitaminoses and Diseases of Nutrition

10. 29 cases of Pellagra were recorded during the year and 15 cases of other Avitaminoses (ariboflavinosis and Vitamin B1 deficiency).

Violence and Escapes

11. There were no cases of suicide. No patients escaped. A patient died of a ruptured spleen as the result of a kick by another patient.

Cases of injury to patients were as follows—

self inflicted	2
inflicted by attendance	2
inflicted by other patients	42

Apart from the case of homicide, all the other injuries were of a trivial nature.

Members of the staff were injured by patients on eighteen occasions, the injuries were not of a serious nature except in the case of a male servant who sustained a depressed fracture of the nasal bone.

Seclusion and Restraint

12.—*(a)* Mechanical restraint by strait jacket for destructive habits of patients—9 patients were so restrained.

(b) Seclusion under lock and key to meet conditions of violent behaviour: 3 female patients.

The greatest duration, in any single instance, for mechanical restraint and seclusion was 4 hours.

Treatment

13. Insulin and electro-convulsive therapies introduced in 1948 were more widely used during the year for the treatment of Schizophrenia and disorders of the affective type with encouraging results. It is gratifying to note that patients now apply for treatment at an early stage of their illness, with a better chance of recovery, as any hope of success in the treatment of mental disorders depends so much on their early recognition. During the year, 26 schizophrenics received Insulin therapy. With an average of 25 comas per patient 42 per cent made a good recovery, 30 per cent were improved and 28 per cent showed no improvement. 265 indoor patients were treated by electro-convulsive therapy with an average of ten shocks per patient. The results are tabulated as follows:—

Involution states, 16 cases treated :—

with good results	11
with fair results	1
with no improvement	2

Manic depressive insanity, 157 cases treated (including depressions and recurrent mania :—

with goods results	88
with fair results	18
with no improvement	51

Schizophrenia, 93 cases treated :—

with good results	36
with fair results	27
with no improvement	30

E.C.T. as an outpatient procedure was also applied to 72 patients (with a total of 437 attendances) most of the patients treated were depressive cases of manic depressive or psychoneurotic type. 88 per cent made a good recovery and thus avoided commitment to the hospital with all its social implications.

16 chronic schizophrenics needing maintenance treatment at weekly or longer intervals in order to keep them out of the institution, also attended the outpatients clinic for E.C.T. Prolonged narcosis and modified Insulin therapy were also used in a number of cases who had failed to respond to Insulin or Electro convulsive therapies.

Occupational Treatment

14. The usual high percentage of inmates employed was well maintained and work of great economic value was accomplished. Over 35 per cent of the inmates were in regular employment throughout the year. All the laundry work of the hospital was done by the female patients, and this together with gardening, ward work, cleaning and the upkeep of the hospital grounds, mattress making, carpentry and the manufacture of the hospital tinware gave employment daily to an average of 160 male and 70 female patients.

An occupational therapy class attended by an average of 25 patients is held twice weekly.

Recreation

15. Both indoor and outdoor amusements were well provided throughout the year and a very successful *fête* was held at Christmas when the nursing staff and patients competed in various sporting events.

Loudspeakers have been installed in the grounds of the hospital. Radio and gramophone music are played twice daily. Cards, draughts, chess and table tennis are favourite games. Football is played by the male patients every fortnight. The piano in the female department is frequently used by patients. Every week about 23 patients have an outing at the seaside.

Accommodation

16. A new female ward was completed last year and occupied in January 1949. The female infirmary, also used as an admission ward, is to be rebuilt and enlarged to have separate wards for admissions and sick patients. A new male ward of 40 beds is nearing completion, and another male ward is to be built next year.

Visits

17. His Excellency the Governor visited and inspected the hospital on 15th December, 1949.

The Central Board of Commissioners of Lunacy held 12 monthly meetings.

A board of survey was held in August. An Audit Clerk examined our store and accounts. No irregularities were found.

Religious Services

18. During the year, mass was said every month and an average of 40 patients attended each service. The Civil Chaplain of the Church of England held one Service which was attended by 3 patients.

Staff

19. Dr. R. Comty, the Medical Superintendent returned from overseas leave on 9th June, 1949.

Miss White, the Matron proceeded on vacation leave on 20th February, 1949. Provisions have been made in the estimates 1949–50 for the employment of 46 additional servants to implement the eight hour shift.

Acknowledgements

In conclusion I would like to thank the Director of Medical Services and the members of the Central Board for their assistance in the management of the hospital.

My thanks are also due to the members of the hospital staff for their steady co-operation and help.

L. N. R. Comty,
Medical Superintendent,
Mental Hospital.

Appendix III

Report on Nutrition Work for 1949

1. *Village Health Workers*.—Five Village Health Workers completed their training in July 1949. They then spent some weeks in carrying out a simple survey of food consumption in schools and in two town areas. After this, two of them were established in the social Welfare Centre in Surinam, under the guidance of Mrs. E. Labat. Here they helped in the activities of the Centre, i.e., in sewing and cookery classes, in the distribution of milk, in weighing babies and advising mothers. They also started simple talks to the schoolchildren and visiting houses in the area in order to give practical help to the mothers, and to try to find out the main problems of the villagers. They were very well received on the whole ,and many of the mothers shewed that they were willing to discuss their problems and said they were glad to have someone to whom they could go for advice.

Two other village Health Workers were placed in Mahebourg, in the premises of the Schools' Clinic. Besides their various activities they are going once a week in the Mobile Dispensary to the outskirts of Mahebourg and this affords them the opportunity of getting to know the inhabitants in these areas.

The workers are keeping records of the problems that arise, and in a few months it will be possible to see what, in the minds of the mothers themselves, are the most urgent needs of the area, and how they can be tackled.

2. *Camp Diable Day-Nursery*.—In November 1949, the Camp Diable Village Council suggested to the Civil Commissioner South that a *crèche* or day-nursery was an urgent necessity in the village. The members suggested that if a Village Health Worker could be made available to take charge, the Village Council could find the necessary building and equipment.

The authority of the Director of Medical Services was immediately obtained for the transfer of one of the Village Health Workers from Surinam Social Welfare Centre to Camp Diable.

A four roomed building is being rented, repaired, painted and a kitchen and bath-room added. All the necessary furniture is being made in the village under the direction of the Village Council members and it is hoped to start work early next year.

This venture has attracted much attention in the district and it is the intention of the Civil Commissioner South to wait until the *crèche* or day-nursery has been functioning for about five months before bringing it to the notice of the Labour Welfare Fund, under whose auspices the scheme is to be extended to other villages.

3. *School meals*.—The experimental stage of the school meals programme came to an end in December 1948, and with much regret the schoolmeals centre in Mahebourg, operating since 1945, was closed until the final plans for school meals should be decided by Government.

Sufficient evidence has been obtained to assess the comparative worth of the different types of meal. It was clearly shown as was expected, that a well-balanced, full midday meal benefitted the children considerably, and that they benefitted more from a full meal than from a " snack " meal of milk, biscuits and yeast tablets only. It was found that in spite of continued explanations to the parents and teachers many children receiving the " snack " still had less food at home, so that they did not derive the benefit they should from the supplement.

While these conclusions are sufficiently clear, it is unfortunately not possible to act on them fully, owing to the extremely high cost of providing food for all primary schoolchildren only, and the aim should be to give equal treatment to them all. If this is done, the provision of a full meal is, for the present, out of the quesion. It has been found impossible to rely on any substantial or regular contribution from the parents, and if the scheme is to be a practical success and no discrimination to be made among the children, Government will have to bear almost the entire cost.

At present prices, the minimum cost of a full meal would be 23 cents per head per day, or Rs. 2,300,000 per year for all schoolchildren. If this cost is reduced at all, the meal would not be sufficiently good nutritionally to justify the large expenditure.

The cost of the " snack " with milk, biscuits and yeast tablets is 8·7 cents per head per day, or Rs. 870,000 per year for all schoolchildren.

It can be seen therefore that the cost of even the " snack " meal is extremely high, and it is unlikely that an expenditure of this order could be made. For this reason a scheme has been presented to Government advocating the provision of milk alone. This is not ideal, but in view of the financial position is the most that can be provided at the present time. There is no doubt that even this would be of very real value to the children as milk provides them with two of the most important food factors in growth, calcium and animal protein, the two that are usually very low in the children's home diet.

It is important to stress the fact that this milk in the schools scheme provides for the use of skimmed milk powder. This form of milk is by far the most economical, providing a considerably higher amount of calcium and animal protein per unit of expenditure than any other form. There is a certain amount of prejudice against the use of this milk, and it is emphasised that far from being a poor form of milk, it is an extremely good one. Weight for weight the calcium and protein content is higher than in either fresh, whole milk or processed whole milk. The removal of cream from whole milk does not decrease the proportion of these nutrients, but increases them, as they are contained in negligible amounts in the cream. Removing the cream lowers

the calorific value of the milk, which is the least important consideration, and can be made good to some extent by adding sugar. This is done in any case, as the children prefer the milk sweetened.

During the time the " snack " scheme has been in operation, i.e., since 1947, there has been no difficulty in persuading the children to accept the skimmed milk drink. Provided it is properly mixed, it makes a palatable drink, and remarkably few complaints have been received, especially considering that it was an unfamiliar food in the first instance. During the frequent visits made to the schools having this milk, it has been observed that the children drink it with every sign of enjoyment.

Weighing.—Height, weight measurements were made of all children in the schools receiving food, and these measurements were continued until the end of the year, at the beginning and end of each term.

4. *Institutional feeding.—(a)* Advice and practical help was given to the Orphanages and the Assistant Nutrition Officer spent some time in daily visits to one in particular, in order to demonstrate the correct cooking of the vegetables and to introduce more variety in the diet.

(b) An experiment was carried out in one Crèche to demonstrate the effect of a high protein supplement on infants suffering from oedema. The experiment has not yet been in force long enough to enable one to draw definite conclusions.

(c) Prisons.—A revised diet scale has been put in force in the Prisons at Beau Bassin, and Port Louis, including increased amounts of rice, pulses and the addition of tea, milk, sugar and bananas or sweet potatoes.

Food yeast tablets equivalent to 3 grammes per head per day are now included in the daily diet and appear to be quite acceptable to the prisoners.

Periodic visits are made to the kitchens in order to check the diet and the quantities given.

5. *Schools Camp.*—The feeding of the Schools Camp at Cannoniers' Point was undertaken and a diet scale drawn up. Preparation, cooking and serving was closely supervised by the Assistant Nutrition Officer. The appreciative comments of both staff and children testified to her successful work.

6. *Survey work.*—Experience during the previous year had shown that it was impossible to attempt to gather quantitative information of food consumption on a large scale without a team of trained survey workers. A simple questionnaire survey was therefore devised, which could be used either in families or on a larger but less detailed scale in schools. Districts representing different living conditions were chosen, and the survey carried out in schools in three areas, with the help of the Teachers.

Family surveys were also being carried out in one sugar estate camp and two town areas. The survey is still being carried on in different schools. The results so far analysed show that this survey will give very interesting and sometimes unexpected information regarding food habits, and the frequency of consumption of various foods in different areas. It is hoped to continue this survey at different periods of the year in order to show how consumption habits vary with the seasons.

7. *Food trials.—(a) Yams.*—At the request of the Food Production Board, trials have been carried out as to the preparation, cooking and palatability of yams. Thanks are due to the Agricultural Officer at Pamplemousses who kindly produced about fifty kilos of yams for the experiment and it has been found that yams are exceedingly good both in flavour and palatability.

(b) Food yeast.—Food yeast trials are being carried out at the Beau Bassin Prisons as to the possibilities of incorporating food yeast in bread for the Prisons.

8. *Training lectures.*—In addition to the course of lectures at the Teachers' Training College for domestic science students and village health workers, a course of lectures was given to Cadet Sanitary Inspectors and to mothers at Camp Fouquereaux Social Welfare Centre.

9. *Exhibitions.*—Two exhibitions on Nutrition have been held during the year. One at l'Escalier Government School and the other at Terre Rouge Village Council hall.

Explanations on the exhibits were given to the visitors on the opening day and to school children the following day.

10. *Inter-Departmental Nutrition Committee.*—This Committee met to discuss the recommendation of Committee No. 11 (Food requirements and Nutritional Status) of the Economic Commission and to decide on future policy. It was decided that the Committee should have a regular quarterly meeting and could meet at any other time if any questions of importance should arise for consideration.

Thanks are due to the Civil Commissioner South for his help in placing the Village Health Workers, and for his interest and co--operation in their work, and to the Staff of the Teachers, Training College who trained these workers. Thanks are also due to the teachers who are giving so much help in carrying out the survey in schools, also the staff of the School Meals Centre for their excellent work during the years of the schoolmeals experiment.

The Nutrition Officer, Miss J. C. Chettle, left the colony on 10th October, 1949, and the work is being carried on by the Assistant Nutrition Officer.

ELSIE L. GEEREEDHARRY,
Assistant Nutrition officer.

Appendix IV

Annual Report of the Dependency of Rodriguez for 1949

General

The Island has sustained an almost continuous drought in 1949, which has resulted in a failure of practically all food crops and a scarcity of fodder. Farm work has therefore been disappointing both for cultivators and day labourers, and the majority of the inhabitants have had to buy food imported from Mauritius at a comparatively high cost. Pioneer dependants receiving a regular income from abroad could feed themselves well, while the others whose only alternative earnings were derived from fishing and the traditional pig rearing, have been underfed.

Water supply has been insufficient in Port Mathurin during the last quarter and principally in the western part of the country where many springs have shrunk into stagnant pools which are more or less liable to pollution by man and cattle. Fortunately only a small number of water borne cases of acute enteritis broke out at Oyster Bay and l'Union in May and September, among children of whom two died.

Although the water supply has been materially improved during the last three years, especially at La Ferme, yet it seems that much remains to be done to counteract the disastrous effects of drought.

Vital Statistics

In the absence of an official census of the Island, the total population of the Island in 1948 was estimated at 13,000 inhabitants. This figure has shown a net increase of 320 units in 1949.

Births.—There were 459 live births and 32 still births as compared with 390 live births in 1948. The birth rate has therefore increased from 30 to 35·3 per thousand persons living, despite the absence of some 600 men serving abroad in the Pioneer Corps, most of whom were married and the adverse economic conditions still prevailing in the Island.

Deaths.—139 deaths were registered instead of 162 recorded last year. The number of children who died under 1 year of age was 43.

Epidemics

In January 1949, the Island was visited by two concurrent epidemics, viz., Poliomyelitis and measles. The former was hitherto unknown here and the latter had not been seen for a long time.

Acute poliomyelitis had established itself unfortunately without warning during the last fortnight of December 1948, until the first paralysed case was recognized and admitted into Port Mathurin hospital on the eve of the New Year, apparently originating from the Hamlet called Roseaux. Subsequent investigations revealed that acute abortive cases had occurred in the Port before last Christmas and that the disease had been introduced into the Island by a healthy carrier who had landed from the S.S. *Zambesia* on the 1st December, coming from Mauritius.

Notification to H.Q.—Notification was made to the Director Medical Services and on the 12th January, he visited the dependency with Dr. Fitton, Orthopaedic Surgeon, two nurses, and bringing at the same time sanitary and medical equipment for the establishment and management of an isolation hospital of 40 beds.

The disease quickly grew into an epidemic which swept over the country until it finally disappeared on the 2nd March.

Domiciliary visits.—Following preventive measures were taken pending help from Mauritius: All known and suspicious cases had been detained and isolated in the New Maternity Ward and the other hospitals. House to house visits were made in Port Mathurin and the most populated centres in the neighbourhood—Oyster Bay and Grand Bay.

Public Notices.—On the 4th January, a public notice was issued informing the inhabitants of the prevalence and dangers of the disease and calling for their co-operation with the Medical services in fighting out the disease with a spirit of discipline and determination, to avoid gatherings, to report any case of fever or paralysis and to take certain elementary prophylactic measures.

Sanitary campaign.—At the same date, all premises, shops and booths were visited in Port Mathurin and a considerable amount of rubbish, empty tins, etc., was collected therefrom and burnt or thrown into the sea. All damaged latrines were caused to be repaired and new ones built wherever necessary. Throughout the rest of the Island, the inhabitants were urged to pay careful attention to domestic sanitation (unfortunately no official control could be effected for lack of personnel, although some progress in conservancy has been noted by me).

Later on, when the net fishing season opened, many fish salting stations were inspected so as to correct any defects in their location and the disposal of offals, in the light of the existing sanitary regulations.

Visiting Officers.—On the 5th January, it became evident that I could no longer cope single handed with the increasing number of domiciliary visits, in view of an early recognition of the disease. Therefore I made an appeal to the Magistrate for recruiting voluntary helpers preferably amongst the school teachers and forest officers to act as visiting officers. The response was quick and gratifying. On the same day a conference sponsored by the Magistrate was held in the district court, in the course of which a team of volunteers was raised and given the necessary instructions for carrying out their duty the next day within certain specified sections of the country extending to St. Gabriel, Mt. Lubin and Port South East.

Population movements.—Meanwhile arrangements had been made by the Magistrate for curtailing day traffic by land and by sea between the Port and the rest of the Island.

The livestock market which used to be held anywhere in the Port, was shifted to a remote spot situated on the leeward side and properly fenced.

Isolation.—Originally the Maternity was used as isolation ward under the nursing care of the midwife, Miss J. Legrand. As the admissions were increasing, it became necessary to find more accommodation and the Government School (which had been closed) was selected for the purpose of receiving an estimated total of 40 patients, with 2 resident nurses. The material and equipment were supplied from Mauritius and Mt. Lubin hospital.

Clinical aspects.—The picture of the disease was made very confusing sometimes, by the presence of coincident measles, epidemic myalgia and hysteria in females. This rendered diagnosis difficult especially in the paralytic stage and obliged me to resort systematically to isolation bed down in hospital and at home, of all suspicious cases for a period of at least 10 days. It seemed to me that those acute cases which had been kept at rest for a sufficiently long time, have rarely developed paralysis—this was the case in Port Mathurin, where personal medical supervision was possible and no paralysis has been recorded. Out of a total of 100 cases, there has been no death although an acute respiratory type caused some anxiety, and ultimately only 5 cases have had residual paralysis, for which orthopaedic appliances have been provided by Floreal centre. The last case was recorded on the 2nd March and until the end of the year the disease had not reappeared.

Measles.—An epidemic of measles began in December 1948 and lasted until June 1949 causing one death by broncho-pneumonia and another by thrombosis of the common iliac artery in hospital.

Poliomyelitis and Leprosy surveys.—On the 28th February, Dr. H. André, leprosy specialist and Dr. A. Bathfield, Orthopaedic Surgeon, visited the island with the object of making a survey of leprosy and poliomyelitis respectively. Their main conclusions, based on the examination of a large number of children, representing roughly 1/6 of the present total population, were as follows:—

(1) That the polio epidemic had ended.

(2) That no infective case of leprosy had been found.

In November, I had to attend the Assizes for a case of manslaughter and was relieved by Dr. Bouton until the 1st December when I immediately resumed duty.

On the 6th December, the dependency was honoured by the visit of His Excellency the Governor Sir Hilary Blood who paid a visit to Port Mathurin and Mt. Lubin hospitals. His Excellency showed much interest in the management of the Maternity and antenatal clinic and as soon as he was informed of the primitive methods of travelling employed by the medical staff, he kindly suggested the use of a jeep for quicker communication between the hospitals, to the future benefit of all concerned.

Dressers L. Daurat and M. Stephen have been transferred to Mauritius, the former after having completed his tour of duty and the latter at his request on grounds of illness.

Port Mathurin Hospital

Dispensary attendances.—4,609. This is less by 2,411 than last year's figure, possibly on account of restrictions of pupulation movement during the polio epidemic and domiciliary visits.

Prevailing diseases were: Poliomyelitis, measles, gastro-enteritis, influenza, dysentery and worms.

In- patients.—275 patients were admitted of whom 56 provided their own diet.

Diseases among in-patients.—Abscess (excluding liver abscess) 136 ; Biliarycalculus, 1 ; Hepatitis, 3 ; Dyspepsia, 2 ; Anaemia, 6 ; Cellulitis, 4 ; Measles, 2 ; Heart failure, 1 ; Tetanus, 1 ; Poliomyelitis, 34 ; Gastro-enteritis, 7 ; Tuberculosis Lungs, 4 ; Bronchitis and Bronchopneumonia, 13 ; Asthma, 5 ; Gonorrhoea, 4 ; Primary Syphillis, 4 ; Soft chancre, 4 ; Amoebic dysentery, 6 ; Bacillary dysentery, 1 ; Salpingitis, 1 ; Bartholinitis, 1 ; Cervicitis, 1 ; Abortion and Haemorrhage of pregnancy, 14 ; Retained placenta, 2 ; Puerperal sepsis, 2 ; Haematocele (retro) 1 ; Diphteria, 3 ; Rheumatism, 3 ; Phimosis, 1 ; Injuries, 7 ; Burns, 3 ; unclassified, 59.

Deaths in hospital.—7 patients died in Port Mathurin hospital from the following causes: Acute puerperal sepsis, 1 ; Eclampsia, 1 ; Diphtheria, 1 ; Acute amoebic dysentery, 1 ; Post abortive haemorrhage, 1 ; Septicaemia, 1 ; Acute enteritis, 1.

Operations.—20 of which 7 were done under general anaesthesia including a case of Intussusception which died 2 hours after operation ; Curettage, 18.

Dental extractions.—355 of which 13 were done under general anaesthesia.

Injections to in and out-patients.—Penicillin, 400 ; Camphor and Ether, 26 ; Cyanide of Mercury, 230 ; Cocaine, 20 ; Bismecol, 276 ; Sodium Cacodylate, 191 ; Sodium Salicylate cum Lugol, 208 ; N.A.B. or Neohalarsine 20 series ; Hydnocarpus, 206 ; Emetine 247.

Vaccinations.—121 of which 4 were unsuccessful.

Leper patients attending for treatment.—8 of whom 3 have been sent to Mauritius.

La Ferme Hospital

Dispensary attendances.—5305.

Prevailing diseases were dysentery, worms, influenza, hypovitaminosis, measles and rheumatism.

In-patients.—73 patients were admitted of whom 9 for polio. Only 48 patients received hospital diet.

Diseases among in-patients.—Abscess, 4 ; Enteritis, 1; Gastro-enteritis, 1 ; Cancer of rectum, 1 ; Suppurative hepatitis, 1 ; Liver abscess, 1 ; Amoebic Hepatitis, 1 ; Confinement, 2 ; Acute bronchitis, 1 ; Congest Lungs, 1 ; Asthma, 3 ; Abortion, 1 ; Post Abort. bleed, 1 ; Parametritis, 1 ;

Blenorrhagia, 2 ; Salpingitis, 2 ; Fibroid Uterus, 1 ; Ophthalmia, 1 ; Acute Gonorrhoea, 1 ; Primary Syphilis, 1 ; Vagal Syndrome, 2 ; Apoplexy, 1 ; Rheumatism, 3 ; Poliomyelitis, 9 ; Hysteria, 3 ; Epilepsy, 1 ; Amoebic dysentery, 6 ; Burns, 1 ; Fracture of ribs, 1 ; Measles, 2.

In and Out-patients.—Venereal diseases and complications.—*Gonorrhoea* and complications, 16 ; Congenital syphilis, 12 ; Primary syphilis, 5 ; Tertiary syphilis, 10.

Deaths in hospital.—2 deaths occurred from cancer of rectum and congestion of lungs.

Operations.—27 of which 23 were performed under local anaesthesia.

Dental extractions.—191 of which 10 were performed under general anaesthesia.

Injections to out-patients.—Bismecol, 89 ; Cyanide of Mercury, 32 ; Emetine, 274 ; Hydnocarpus, 29 ; Exatrope, 14 ; Biniodide of Mercury, 18 ; Sodium Cacodylate, 36 ; Neohalarsine, 15 series ; Penicillin, 3 tubes.

Vaccinations.—125 of which 12 were unsuccessful.

Mount Lubin Hospital

Dispensary attendances.—10,034, showing an increase of 2,435 over last year's figure. This is probably due to the quarantine measures taken in Port Mathurin during the Polio Epidemic.

Prevailing diseases were Polio, Dysentery, Measles, Worms and Influenza.

In-patients.—114 patients were admitted, of whom 69 provided their own diet.

Diseases among in-patients.—abscess, 7 ; liver abscess, 1 ; amoebic colitis, 8 ; Gastro enteritis, 2 ; Trench mouth, 1 ; bacillary dysentery, 1 ; Bronchitis, 1 ; Bronchopneumonia, 3 ; Pulmonary Tuberculosis, 5 ; Pleurisy, 3 ; Poliomyelitis, 22 ; Meningitis, 1 ; Tetanus, 2 ; Hysteria, 4 ; Heart disease, 2 ; H.B.P. 1 ; Phlebitis, 1 ; Oblit. Endarteritis, 1 ; Retro. of Uter., 2 ; Cyst (ovary), 1 ; Carcin. of cervix, 1 ; Puerperal Sepsis, 2 ; Uraemia, 1 ; Epidemi. myalgia, 5 ; Fractures, 3.

In-and-Out-patients.—Venereal diseases and complications. Gonorrhoea, 17 ; Tertiary Syphillis, 43 ; Primary syphillis, 6 ; Secondary syphillis, 6 ; Congenital syphillis, 27.

Deaths in hospital.—6 patients died in hospital from the following causes:—

Puerperal sepsis, 1 ; Tetanus, 1 ; Syncope, 1 ; Meningitis, 1 ; Bronchopneumonia, 1 ; Pleurisy, 1.

Operations.—150 of which 12 were done under general anasthesia including 2 amputations of thigh.

Dental extractions.—508.

Injections to out-patients.—Bismecol, 48 ; Biocholine, 24 ; Emetine, 200 ; Mercury Cyanide, 100 ; Hydnocarpus, 32 ; Livadex, 350 ; Exatrope, 40 ; Horse Serum, 2 ; Normal Saline, 12 ; Nevarsphenamine, 7 series, Neohalarsine, 15 series ; Quinby, 36 ; Novocaine, 40 ; Penicillin, 48 tubes ; Strychnine, 100 ; Morphia, 10 ; Sodium Cacodylate, 110 ; Sodium Salicylate, cum Lugol, 100 ; Mercury Bin iodide, 192 ; Calcium Chloride, 60 ; Camphor oil and Ether, 12 ; Diphtheria Antitoxin, 2 ; Tetanus Antitoxin, 4.

Lepers under treatment.—3.

Vaccination.—186 of which 164 were successful, 10 unsuccessful and 12 have not yet reported for inspection.

Maternity and Antenatal Clinic

Antenatal.—188 women including 44 primiparas attended the 3 hospitals for examination on 227 occasions. Consultations were held once every fortnight at La Ferme and Mount Lubin and 3 times a week in Port Mathurin.

A certain number of cases of suspected pregnancy were examined by me at the request of the Magistrate on behalf of the Army.

Maternity.—63 cases of confinement (16 primipara) have been attended to by the midwife in Port Mathurin, 47 of which have been admitted into the Maternity. 2 women in unexpected labour reported to La Ferne Hospital for urgent delivery with good results.

Forceps delivery,	3 ;	Livebirths indoor, 45 do. premature, 1	Stillbirths, 5
Prolapsed cord	2 ;		
Maternal deaths	2 ;	Women died of eclampsia and acute puerperal spesis.	

Miscellaneous

Patients sent to Mauritius at Government expense:—

For Fibrome uterus	3	For poliomyelitis	3
For Leprosy	3	For mental disease	4
Orthopaedic treatmant	1	For Hodgkin's disease	1

Port

Pratique was given to the following vessels: S.S. *Zambezia* 7 times, M.V. *Ruys* and *Boissevain* which brought back 600 pioneers, S.S. *Rondeau Park,* A.M.V. *La Perle,* twice ; *Mexican Yawl Barca Di Oro,* H.M.S. *Birmingham.*

Police and Prison.—Members of the Police Force reported sick on 6 occasions, Police cases of alleged injury or rape sent for examination: 91.

Prisoners were examined weekly and 31 reported sick.

Autopsies.—Three autopsies were performed. One for manslaughter one for drowning, and one for haematemesis.

Food inspection.—219 oxen were slaughtered in Port Mathurin and the vicera were examined and found free of communicable disease.

Conclusion

1. The important problem of water conservation and protection is pointed out as demanding an early solution, just as speedily as that of soil erosin with which it is closely connected.

2. The population has increased by 320 units at a higher rate than last year.

3. The standard of nutrition of the inhabitants was not so good as it was in 1948.

4. No sporadic case of poliomyelitis has been encountered since the end of this epidemic in March until to-day.

5. Venereal diseases have shown a marked increase throughout the country.

6. The improvement of domestic sanitation under qualified control is most desirable.

I have the pleasure to thank to the Director, Medical Services, the Magistrate for Rodriguez, Drs. H. André, A. Bathfield and Fitton, for their valuable assistance and encouragement during the Polio epidemic.

I want to record the wilful co-operation of the whole population especially the school teachers who have done some excellent work as visiting officers.

Port Mathurin
16th February, 1950

C. D. d'Avoine,
Government Medical Officer.

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